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# **GLEANINGS IN** **THE BEE CULTURE** A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS. ILLUSTRATED SEMI-MONTHLY Published by THE A. ROOT CO. \$1.00 PER YEAR MEDINA, OHIO.

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No. 20.



YES, I AGREE to keep mum if you'll get Doolittle to answer that question, p. 710—at least in print; but just wait till I catch him out alone, if his answer is too saucy.

"DO BEES sometimes stay out in the field all night?" is a question in *American Bee Journal*. Most of the 30 replying say yes, but there are a few doubting Thomases.

"IN 1897, when so many factories were running night and day, the season was almost a failure" (footnote, page 710). Don't you mean 1898? 1897 was a big year, in this region at least. [Let's see; yes—I guess you are right.—ED.]

IN MOST SECTIONS the space between separator and capping is  $\frac{1}{4}$  inch; but in some cases it is  $\frac{5}{16}$ . That's only  $\frac{1}{16}$  difference, but it looks a good deal more than  $\frac{1}{16}$ . [In a few instances bees build the combs to within  $\frac{1}{8}$  of the separator; but generally speaking,  $\frac{1}{4}$  is the general average.—ED.]

THOSE BE brave words, Brother A. I., that you say about humbug healers, p. 732. Now please print a plain paragraph about a good friend of mine who lately said some rather apologetic things about that arch operator, Dowie, who owns up to having got \$1,000,000 for which he will account to no one but God.

IF YOU HAVEN'T a grapevine, "get right at it this fall and plant one," says A. I. Root, p. 731. Don't you tell him I said so; but if you live in Northern Illinois, wait till next spring to plant any vine or fruit-tree. [Personally I do not like grapevines in our apiary, and I do not know of any of our apiarists who do or did. If the trellis is large in size, and the hives four or five feet away from the vine, it may do.—ED.]

THE *Deutsche Ill. Bztg.* warns against buying sugar without knowing where it has been kept. A neighbor lost all his bees through feeding sugar that had been stored in a room

with kerosene, turpentine, etc. [I should be inclined to believe the loss was not due to the kerosene or turpentine, but to some other cause. Why, to me it seems absurd to think that the mere odor of either could so affect sugar as to kill the bees fed on it.—ED.]

WILL OLD-STYLE sections be higher than the plain the coming season, or shall we be encouraged to hold on to the old style by having the inset and the extra lumber thrown in? [There will probably not be much difference in the price the coming season, although it is plain that, when plain sections come more into popular favor, they will have to be sold for less money. Our own books show that they are working that way.—ED.]

AN OBJECTION to sections as light as some are made is that one must be too careful in scraping not to break them. The thinness has been carried a little too far. Please thicken up a little. [If you mean the wood of the section is too light—that is, too thin—I would say that the probabilities are that the 9-to-inch width of section will be very soon superseded by those that are 8 to the inch. We are preparing to make our sections for another season all  $\frac{1}{8}$  inch thick.—ED.]

"THE SECTION that promises to be standard is  $4\frac{1}{4}$  square by  $1\frac{1}{2}$ , plain." That's what you thought a few months ago, Mr. Editor. Have later developments made you change that view? [I have not changed my opinion, doctor, unless it be that there is a possibility that the tall plain section will in time come to be the standard. But I am very well satisfied that the plain section, either square or tall, will in time supplant the section with insets.—ED.]

I DON'T SERIOUSLY object to your saying "squashed" instead of "squashed," Mr. Editor, if you prefer, but I do object to your dropping out the vowel, making it "squashed," as you have done at bottom of p. 724 and previously. I'll stand a good deal from you, but the line must be drawn somewhere. [Have it either way you want—with one "u" or two. Either way expresses my meaning. We used the word as a "colloquialism." We knew it should be spelled *skwusht*, all the time.—ED.]



IT'S A GOOD PLAN, when you take a super of sections off a hive, to pencil on one of them the number of the colony. Then when you find a super of greasy-looking sections you know where to replace a queen next spring. [Good scheme! And while you are about it, it is a good point in favor of numbering hives.—ED.]

THE *Wuerzburger Praktischen Wegweiser* says the publisher of GLEANINGS has offered \$25 apiece for *Apis dorsata* queens, and that a Hollander named Verholen tried with dogged persistence for years to domesticate *dorsata* in Java, but all in vain. Out of 87 colonies that he secured, not a single one but took French leave, deserting brood and honey. [I wish, doctor, you could get hold of the full report of these experiments. It will make very interesting reading, both to the *dorsata*ites and to the antis.—ED.]

SPEAKING of foreign bee journals, "Stenog" says, p. 712, "Every month has its detailed account of what to do and how to do it. In this regard they set a good pace for American journals." It would be an easy thing for GLEANINGS to occupy a page or two each month with such matter, and it could be kept standing in type with but little change from year to year; but I'm afraid readers, even beginners (if they have a good text-book) would object to space being taken up that way. That space is better taken up with answers to live questions from beginners and others, in which American journals set the pace.

DECIDEDLY INTERESTING are those figures that H. Lathrop gives on p. 719, and I think Harry means to give the unvarnished facts. Figuring on 15 years gives something like this:

|   |                  |
|---|------------------|
| 3 years of failure.....                         | 00               |
| 5 heavy crops of 100 each.....                  | 500              |
| 7 medium crops of 50 " .....                    | 350              |
| Total per colony for 15 years.....              | 850              |
| Average annual yield comb honey per colony..... | 56 $\frac{2}{3}$ |

The average beginner in the average locality, who figures upon that as a basis in deciding as to making bee-keeping his principal means of support, will be sadly misled. There are a few localities where in a full year 100 lbs. of comb honey per colony might be reached, but they are few. Some would do it with a few colonies, but not with 75 or 100. In most places there would be more than 3 years of failure in 15. Harry Lathrop may not know it, but I doubt that the average bee-keeper would do what he has done in that same locality. All the same, his contribution of facts is valuable.

I PUT 46 supers of unfinished sections in the shop cellar, piling them crosswise, and then opened the door about Oct. 1. The weather was fine, and it took the bees about two days to clean them. Combs gnawed a little, but not seriously. [This or a similar method is the only practical way of emptying out unfinished sections. They may be piled in stacked-up hives with a small entrance, or in a dark

cellar, where it takes the bees a little time to find their way to the honey. If I am not mistaken, nearly all the largest comb-honey producers use either one or the other method; but you will remember that it was opposed pretty vigorously by some of the leading lights at Philadelphia, on the ground that it has a tendency to incite robbers, and that bees once robbers were always robbers. We have tried the plan here at the Home of the Honey-bees a good many times, and I do not see that bees are any the worse off when it is over with than when they begin. See article by Harry Howe in this issue.—ED.]

"YOU CAN TAKE partly filled sections and place them in the upper story of a colony; and the bees below, if you give them time enough, will empty them out and store in the brood-combs" (GLEANINGS, 724). For this "locality" that phrase, "if you give them time enough," should be strongly italicized, making the time generally not less than six months. I've had heaps and heaps of experience on that point, with large numbers of supers, extending over years, with all sorts of insinuating devices, and I must humbly confess that I think I never got a single super cleaned out when allowing only one colony access to it. If any one has succeeded, I'll be effusively thankful for the trick. [We have had bees empty out partly filled sections in the upper story; but it sometimes took two months, and that is the reason why I put in the qualifying clause, "if you give them time enough." Taking it all in all, the bee-keeper had better not fool away his time and that of the colony in any such way as this; better—far better—pile the sections up in the cellar and let all the bees rob them out slowly as you describe elsewhere in Straws.—ED.]

*J. H. H., Neb.*—If the oil-stove was turned down too low it might possibly have been an indirect cause of the death of the bees. We would not advise putting a stove of that kind into a cellar and keeping it there more than two or three days at the most. You did right in dividing the bees as you describe. If one of the queens is a good one, save her and destroy the other. If neither one is to your liking, destroy both and introduce another; but in the fall you must not expect very much egg-laying, for that generally stops along in August or September. The mere fact that eggs are not found in a hive at this time of the year is no indication that the queen is not doing as she ought. Yes, by all means use cushions with the double-walled chaff hives. Double hives would be of little use without cushions on top, for they are more important than the double walls of the hive. In putting bees up for winter I would not take away combs of honey, even though they are not covered with bees or contain no brood. If you have any fear about a queen not living through the winter because of old age, or because she is feeble, better replace her with a young laying queen. Yes, cushions should be at least six inches thick.



Naught remains of summer's wealth;  
 Blasted stalks and withered flowers  
 Speak to us of life's best hours  
 That fled away by stealth.

As the report of the Philadelphia convention will appear in pamphlet form, besides being discussed in this journal, it has not been deemed best to make any condensation of it here.

#### AMERICAN BEE JOURNAL.

Mr. York says Charles Dadant is nearly 82 years old. Better than that. He'll be 83 next May, having been born May 22, 1817. May he stay 17 years more and make a century!

Mr. W. M. Whitney says he has noticed that bees do not disturb a skunk, while they will drive a white dirt-throwing rooster out of the yard. He concludes the bees tolerate the skunk on account of its quiet ways, and yet it eats bees as well as chickens do. I'd rather kick a rooster, I believe, than a skunk. A little honey loaded with strychnine, placed just under the surface of the ground in front of a hive, will deprive a well-bred skunk of his worst feature in a short time.

Mr. York is introducing pictures more and more into his excellent journal, and I commend him for it. On the first page of his issue for Oct. 5 is given a view of what I deem to be the prettiest bee-yard yet shown. It belongs to F. G. Herman, of New Jersey. It is a veritable little park, and Rambler's "muse" prompts one to say:

I'd like to be a honey-bee,  
 And fly around that park;  
 I'd visit all the flowers bright,  
 And fill my combs by dark.

In regard to bees and grapes, Mr. C. P. Dadant says: "Another heavy grape crop is now on the vines in this vicinity, and yet we do not hear the usual complaint about bees eating grapes. It looks as if the uneducated grape-grower had at last come to the conclusion that the bee-keepers are right when they assert that bees can not puncture sound grapes. But such is surely not the case, and the silence of the grape-growers comes from the fact that no damage is being done this year, for the very simple reason that, in this vicinity at least, the weather has been so dry that the grapes are not bursting; and although the honey crop is short in the uplands, the bees have no occasion to annoy the horticulturist, for there are no damaged grapes for them to work on."

In a discussion with an old Frenchman, the latter complained to Mr. Dadant for keeping so many bees as to destroy his grapes. He insisted that the bees made two small holes in the grape; but Mr. Dadant showed him

that it was a quail that had done the mischief. To show the folly of charging the bees with the mischief I give herewith, by courtesy of



MANDIBLES OF HORNET.



MANDIBLES OF BEE.

Mr. York, a cut showing the mandibles of a hornet and one those of a bee. While the former might be able to scrape a hole in a grape, it certainly is evident that a bee could not do so, as the mandibles would slip over it like a cow's lips over a pumpkin. Mr. Dadant says it will take years to eradicate the prejudice grape-growers have against bees. If the question can be settled, Mr. D. has done it here, as he and his father have raised grapes and bees together on a larger scale, perhaps, than any other persons in America. They have a vineyard of 13 acres, and about 90 colonies of bees on the same farm, but find "the bee is not the enemy of the horticulturist, but his friend." Mr. Dadant well says that it is just as necessary to teach these truths in our public schools as that the earth goes round the sun.

#### PROGRESSIVE BEE-KEEPER.

I much regret that F. L. Thompson should construe what I said of him on p. 388, May 15, as derogatory when I meant it for the highest praise. In saying he holds in light esteem the rules of syntax, punctuation, etc., I meant that he has so good a natural taste as a writer that he can be safely trusted to be a law to himself, and that he does not have to hunt up a rule for all he writes. This is perfectly plain from my closing remark: "It is a fortunate thing for us that Mr. T. is well qualified to act as an independent worker." In spite of this and what I said of him on pages 80, 255, 567, he calls this "mud" and "taffy," intimating that I accuse him of being a poor scholar. He says, "Whatever implication it has is false, and the writer knows it." I am glad to have Mr. Thompson's authority for now believing that my good opinion of him was ill founded; but I did *not* know it till just now.

#### FOREIGN JOURNALS.

It is a Bavarian maxim to plant a tree in every open space, and have an apiary near every house.

The *Rheinische Bienenzeitung* says the government of Holland has ordered a regular number of bees to its East India possessions to fertilize the coffee and cocoa. Honey flavored with coffee would certainly be fine.

Mr. Van Dieren, in *De Bienen vriend*, a Dutch journal, says moisture in hives can be obviated by placing in them two or three lumps of chloride of calcium. This has a great affinity for moisture, and should be renewed every two weeks. Do not mistake it for chloride of lime.



The republic of Chile is fast coming to the front as a honey-producing state. A German paper speaks of it as the California or Eldorado of bees. It enjoys a favored climate, greatly simplifying wintering. Bee-keepers in that country are ably represented by *El Apicultor Chileno* (*The Chilean Bee-keeper*), edited by Juan Dupont-Lafitte, a man who is fully abreast with all that is going on in beedom. Chile might be represented by a green ribbon an inch wide and a yard long, its real length being about 2600 miles. With the Andes Mountains on the east and ocean on the west it enjoys a fine climate for bees. Their summer is, of course, our winter.

Francis Joseph, Emperor of Austria, has an apiary in his private garden, not far from the windows of his palace, for convenience in observation. The government gives about \$12,000 a year for the purpose of developing scientific apiculture. It is worthy of note on the part of the various European governments, that they favor in every way men of talent, rich or poor, not only in bee culture, but in all the arts and sciences. Even Russia, beginning with Peter the Great, has offered every inducement for artists and artisans to go there to live. The result is, that St. Petersburg is now probably the finest capital in Europe, while less than 200 years ago its site was a dreary bog. The king of Bavaria appropriates annually about \$8000 to promote scientific bee-keeping.

A correspondent of the *Revue Eclectique*, in writing from Greece, gives the following:

"From the most remote antiquity, and even before all civilization, Greece was a country essentially honey-yielding; and even down to our times the honey harvest in Hellenic countries has had a celebrity that no other rival product has been able to share; for the abundance and especially the richness of the flora of certain localities favor in an especial manner this agricultural industry.

"Nevertheless, in spite of the exceptional situation of Greece it is to be noted that the honey production of that state does not exceed \$200,000 in value, and this does not suffice for home consumption. On the other hand, the celebrated honey of Hymettus, once gathered on the mountain of that name, is produced no more. Grecian honey, the superiority of which is due essentially to its aroma, and to its fine flavor and nutritive properties, sells in Athens at from 37 to 45 cents a pound.

"There is also another kind of honey called *rodomeli*, or honey of roses. The colonies that produce this honey are situated in the province of Carystie, in the Eubœa—regions which are covered with wild roses, from which the bees gather honey.

"The honey produced by the juices of these plants exhales a perfume of roses that is very marked. It is sent principally to Constantinople, where it is sold at a very high price to Turkish families, who use it for cooking, and for seasoning their pastry. Wax is worth from 37 to 45 cents a pound."

## THE AUSTRALASIAN BEE-KEEPER.

We have just received the second issue of this enterprising journal, published by Pender Bros., West Maitland, N. S. W. Bee-keepers there, it seems, are to have a little government help in selling honey. This is to be done through their Board of Exports. The assistance rendered by this Board must be of such a character that the honey on which a government brand is placed can be guaranteed as to purity and quality, and thus prevent any rubbish being sold as Australian honey. Mr. Pender gives an interesting account of his visit to this country a year ago. Wintering, as we have it in our Northern States, seems to cut no figure in that warm climate.

The editor says the discoloration of comb honey is due to light. He had some stored for three years that remained as white as ever except where the light struck it. But if that is true, why is wax exposed to the sunlight in order to bleach it, as it always does?



## DISEASED BROOD IN THE STATE OF NEW YORK.

Pickled and Foul Brood, and Where Scattered; Tall Sections; When and by Whom They Originated; the No-drip Shipping-case.

BY CAPT. J. E. HETHERINGTON.

*Mr. E. R. Root:*—In reply to your letter requesting information in regard to foul brood in our State, also tall sections and no-drip shipping-cases, and the length of time I have used them in my business, I will reply by saying it is indeed true that the bee-keepers of this section of our State have been greatly agitated for the past three years over the appearance of foul brood, pickled brood, or whatever it may prove to be.

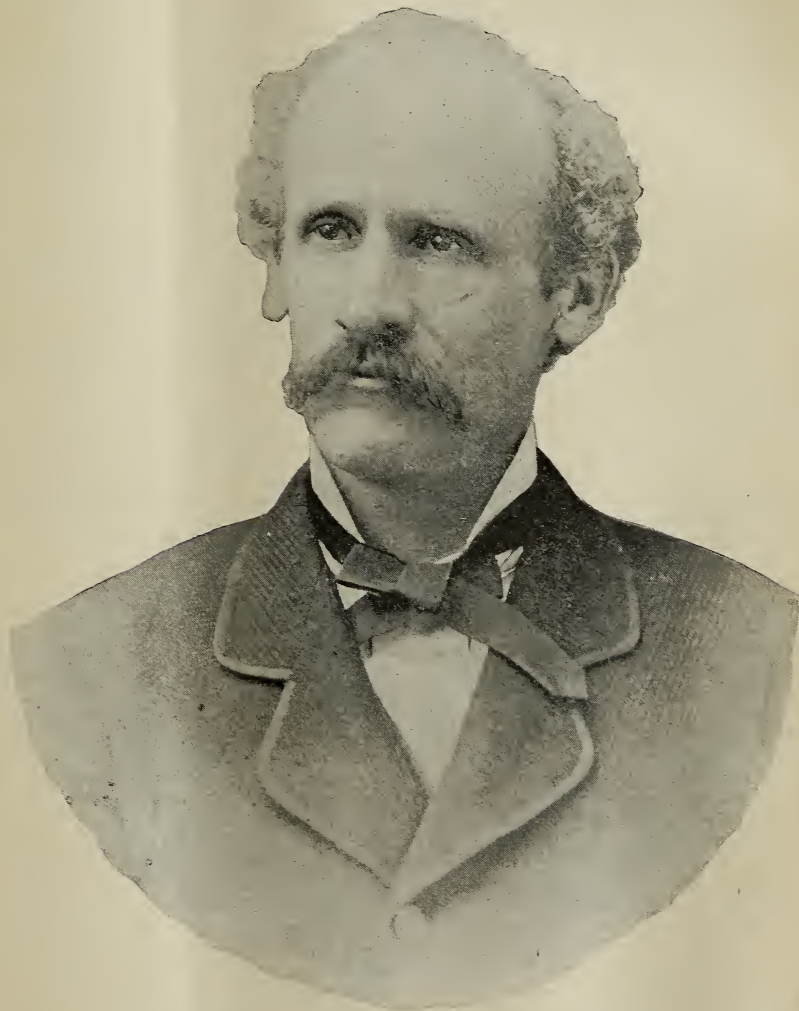
I learn from Mr. N. D. West, who has been recently appointed foul-brood inspector for our State, that it first made its appearance at or near Sloansville, in nuclei swarms bought in the South; and with Schoharie County as a center it has spread quite rapidly, and become a very serious problem, presenting in some localities a more serious aspect than in others. On the surface of things, from facts presented, one might almost conclude three or more diseases existed in the same locality.

My first personal experience was last July on my return from the South. All I have seen up to this time is clearly indicated and described by Dr. W. O. Howard, of Texas, and Mr. N. E. France, foul-brood inspector for Wisconsin, as pickled brood.

During my early bee keeping experience, when "Father Quinby" was at the helm, we had the scourge foul brood, and I am satisfied that what we now have has none of the marked characteristics of that disease.

Mr. N. D. West, who is about 35 miles east of me, says he certainly has in his locality unmistakable foul brood, while Mr. C. H. Ferris, a bee-keeper of 25 years' experience, and inventor of the steam wax-extractor, living about the same distance west (one of the afflicted), says he has not seen a cell of foul brood; that it is clearly pickled brood, and calls it a poverty disease, and cites the 85-col-

As to my use of tall  $4 \times 5 \times 1 \frac{5}{8}$  sections, I experimented with them in 1885 and '86. The next year, 1887, I changed one-third of my business to them. The following season I changed my entire outfit. I have always advocated their use, my argument being that, from infancy, our eyes have been trained to that form, and it is, therefore, more pleasing. Doors, windows, books, letters, and the like



CAPT. J. E. HETHERINGTON, THE MOST EXTENSIVE BEE-KEEPER IN THE WORLD.  
*See Editorials.*

ony apiary of Mr. W. L. Smith, an old-time bee-keeper, which he examined last spring, and found all the colonies badly affected, on recent examination not a trace of it could be found; claims it can not be foul brood, as that trouble always goes from bad to worse. We have many good practical men who are firm in the belief that the trouble is pickled brood and nothing else.

are in that form. It is seldom an artist makes a square picture—( $4 \frac{1}{4} \times 4 \frac{1}{4}$ )—generally rectangular in form. I have no knowledge of their prior use, and think they will increase in popularity.

As to no-drip shipping-cases, I asked one of my men this morning how long I had used them. He said he began work for me in 1887, and had never seen any other kind used.



I place a sheet of manilla paper on the bottom of the case, and tack across this paper, at right intervals, thin strips of wood  $\frac{1}{8}$  inch thick by about  $\frac{7}{8}$  inch wide. The sections rest on these strips at the corners, which raises them  $\frac{1}{8}$  inch above the paper which holds all drip; these slats are sawed from edgings and waste lumber, and cost next to nothing. The paper costs six cents a hundred sheets cut exact size.

For years I have made a practice of covering my honey with a sheet of cotton cloth while in transit. This sheet is billed with the honey, and returned to me for future use. This covering protects the cases from cinders and dust which enter the car while in motion, and insures a case at its destination clean and neat in appearance instead of one begrimed with dirt, the no-drip case contributing to this end.

If the journals would keep before their readers the necessity and advantages of sections well cleaned and assorted, sending nothing to market but such as will be pleasing and satisfactory to the consumer, and packed in a neat well-made case, kept neat and clean by no-drip cases and cloth cover, so that our goods shall be regarded as desirable to handle by the trade, a matter clearly in the interest of all producers, they will be conferring a great benefit to our industry.

Cherry Valley, N. Y., Sept. 11.

[I would explain that this article is the result of a series of letters that have passed between Capt. Hetherington and myself. I had heard that a sort of diseased brood was making rapid headway in certain sections of New York; and in order to get reliable information I wrote to a number of the prominent beekeepers, including Capt. Hetherington, and of the latter I also asked if it were not true that he was the originator of the tall sections and no-drip shipping-cases. The article above is in reply.]

That foul brood has got a start in some portions of the State of New York there can be no doubt, as Harry Howe, bacteriologist for a time at the Cornell University, after examining specimens, pronounces them genuine cases of foul brood—*Bacillus alvei*. Most of the others he says are of a milder form—perhaps pickled brood, but a different form of germ life, and probably not the same disease. It is this latter that seems to have visited certain localities in the State, and which has disappeared; for, as nearly as I can ascertain from others in these places, this new diseased brood, while similar to foul brood, lacks two or three of the important symptoms; namely, the glue-pot odor, the peculiar ropiness, and generally the characteristic color. The odor, when noticeable, has something of a sour, yeasty, fermented smell.

This peculiar disease (pickled brood we will call it) will go through an apiary and then disappear of itself, even when no treatment is administered. It seems to be somewhat contagious; but, like influenza and other maladies of a like character, it leaves the patient (the bees) somewhat the worse for wear.

I have procured a sample of this brood and forwarded it to Dr. Howard, the author of a work on this subject, and a bacteriologist, at Fort Worth, Texas. From the preliminary examination he was able to make, he did not call it foul brood, nor did he think it was the pickled brood he had described in his book; but I am expecting a report from him soon, when he will tell us more of its real character.

I have had some little correspondence also with Mr. Benton in reference to getting government aid in the investigation of this new malady, and it is no little pleasure now to report that the Department of Entomology is preparing to investigate this disease, and has asked for samples of pickled brood or other diseased forms for the purpose of examination. Mr. Benton belongs to the Department of Entomology, and will have a good deal to do with the matter. That he has interested the powers that be, in this matter, at all, is a matter of congratulation; and we now feel that this disease which has been cropping out here and there all over the United States will at least be thoroughly studied, and, if possible, its cause and cure known.

Of the captain's connection with tall sections and no drip shipping-cases I shall have something to say editorially elsewhere.—E.D.]

#### THE SEASON IN CALIFORNIA.

Scarcity of Honey; Alfalfa a Future Honey-plant; Shade for Bees; Spiders and Ants as Moth-destroyers; Loss by Fire; an Interesting Article.

BY R. WILKIN.

In 1898 my 600 hives of bees, after my spending \$400 or more on feed for them, were, like others in the country around me, reduced in numbers nearly a half, being in the dry mountain region of Newhall, Los Angeles Co., Cal. The remaining hives were exceedingly poor and weak. In March, 1899, many of our beekeepers being confronted with the practical certainty of a worse season than the previous one, moved to wet or irrigated lands to save their bees. I took my 340 two-story hives of bees, and nearly as many with empty combs, and the outfit for a home and apiaries (two carloads), to the alfalfa-fields of Famoso, Kern Co., where the snows on the Sierra Nevada Mountains usually furnish water sufficient to water the great San Joaquin Valley. But the snow was lighter than usual, and the unusually cold season prevented its flow of water until in June, so there was a meager growth of alfalfa and a corresponding amount of honey produced.

I closed the season with 325 hives of bees and  $2\frac{1}{2}$  tons of choice extracted honey which I sold there f.o.b. at  $6\frac{1}{2}$  cts. But I tried three days later to buy 15 tons of water-white honey at 7 cts. to fill an order from an Eastern firm, but I could not get it to suit.

This year the producer takes part in dictating terms of sale, so his whole crop has to go together, light and amber. I notice the honey



does not have to be so light-colored this season to pass for "water-white" as it usually does.

The yield of honey in the hundreds of miles of the San Joaquin Valley varied from nothing at all to 100 lbs. or more to the hive. At Los Banos, 150 miles north of me, L. E. Mercer, with his 700 hives, and others, seemed to fare about as I did. About Bakersfield, 25 miles south, where water is more abundant, and malaria more common, the flow of honey is much more abundant this season. I preferred to dodge malaria and take my chances on less honey.

My stay in the valley impressed me strongly with the fact that alfalfa, yielding such an extraordinary amount of food for animals, will, in the near future, be cultivated wherever conditions favor its growth, which will surely be followed by the bee-keeper to secure its wonderful yields of honey, which, if not the most popular, is a very fine honey. I expect hereafter to hear of bee-keepers crowding each other in the alfalfa-fields, which are only beginning to be fully appreciated.

The heat in the San Joaquin Valley runs high, so that bee-keepers usually place their hives in rows five or six feet apart, facing away from each other, leaving hives only ten or fifteen inches apart in the rows. The bee-keeper works in the street between the rows, causing much loss of queens returning from their fertilizing-trips. A shed 10 or 12 feet wide, of boards, brush, or straw, supported on posts 7 feet high, covers these two rows and the street between them, making a very pleasant place to work in hot weather. Occasionally these covers catch fire. The result is, the apiary is burned. I used the precaution to cover mine with "Cabott W." muslin supported on wire. Drill or duck would be more serviceable, being easily removed when the hot weather is over.

I kept a hive on scales all the season, and observed that, when the thermometer rose from 80 to 100°, bees collected most honey; above that, the amount diminished, so that at 110 to 116° almost nothing was gained, and in some cases the sealed brood was killed, remaining in the cells the rest of the season, seriously damaging the hives. Younger brood may have been killed and cleaned out without my noticing it. Heavy combs of honey in hives without bees, but in the shade, began to melt down.

Spiders and ants are serviceable in hives of combs without bees on them. For three months I did not find a living worm on my thousands of empty combs, in the hottest of the season. Wherever the moths would start, the ants seemed to be present to eat them. Query: Is it practical to cultivate ants to suppress the moth? I know that many would like to suppress the ants.

I made one quite objectionable blunder this season. I have concluded that, when I have to live alone or in the mountains with my bees, as so many California bee-keepers do, I shall make my surroundings as comfortable as possible. I accordingly built myself the neatest and most comfortable bee-house I have seen in California. It has a web of wire cloth,

face high, all around it, for ventilation, with awning outside to raise or shut down over it according to the weather, and then collected and arranged around me every thing I needed. I used a kerosene-oil stove to heat the water for my knives when uncapping. As the flame of such stoves creeps higher as they warm up after being lighted I was always careful to turn the flame down well before going out for a load of honey, except the last time. When I looked back to the house the flame was to my bed up stairs. All I could save was my trunk and bicycle. It went rather awkward to be without a coat or a bed—nothing to eat or cook, nor to eat it with if you had it. My clock, choice books, account-book, notes, pocket-book, money, and keepsakes are all gone. My extracting-outfit, including your Cowan extractor, and many tools, all yielded to the flames, for my season's beeswax helped to make a flame that the neighbors said rose 200 feet high. One-third of the cloth covers of my hives were burned off without setting fire to my hives. Had I saturated my muslin with a solution of borax and sal ammoniac, as I had contemplated doing, I presume it would have been but little damaged. Oil-stoves are so handy I wish they would never go wrong.

If you have any dodecahedron paper-weights I wish you would send me one, as the one you sent me as a souvenir for being an everlasting subscriber to GLEANINGS was badly damaged.

Ventura, Cal., Sept. 24.

#### DR. MILLER'S SPLINTS FOR STAYING UP FOUNDATION.

Patent Medicines.

BY B. F. AVERILL.

I wish I could correct Dr. Miller's plan of setting foundation with sticks. Those who try it according to explanations on page 314 will certainly have a troublesome task. His sticks are too small. The proper size should be  $\frac{3}{8} \times \frac{1}{2}$ , and  $\frac{1}{4}$  inch longer than the space between top and bottom bars, which should be grooved to receive ends of splints. The splints need not be waxed. Eggs are laid and bees are hatched and matured on the wood just as well as in any of the other cells. His method is too complicated. I just put 4 of the sticks in a frame, lay on the foundation, turn over the frame after the last three sticks are sprung in and rolled down, and roll down the *first four*. This completes the work ready for the bees to build out their combs. If the foundation touches the top-bar there will be no sagging or bulging of combs. Five sticks are not sufficient. It requires 7, and *larger* sticks than  $\frac{1}{8}$  square. There is no trouble about bees eating down the sticks at the bottom unless they are unsound. A very slender or fragile stick might be gnawed away at the bottom; but one or two missing sticks after the combs are drawn out are immaterial. The combs will be stronger than in wired frames.

The remedies — advertised, so far as I have tried them, are very good, and no doubt their specifics are brought to the service of

thousands who would use no other appropriate remedies for the restoration of various bodily functions. Their formulas are free to any practicing physician who may apply to them, with stamps to cover postage. Several of Dr. ———'s compounds are extensively used by the medical fraternity. Not everybody can follow a course of dietary self-treatment, as yourself and I have been accustomed to do. Not everybody employs a physician for incipient disease. A great many trust to the use of standard specifics that can be purchased for half what a physician would charge for prescribing. Many patent medicines are doing a great deal of good, else their manufacture would not be sustained by public demand. This, however, is only my opinion.

Howardsville, Va., April 22.

[Dr. Miller replies:]

The plan of using foundation-splints is one with regard to which I had no precedent, having never heard of any one else having tried it till after I had. It is, of course, by no means certain that my plans may not be improved, and I wish Mr. Averill had been a little more explicit. He says my sticks are too small, but does not say why it would be better to have them larger; neither does he say why seven sticks would be better than five or better than eight. He uses more than four times as much lumber as I do in the sticks of each frame. Without seeing any special reason for the larger sticks, I should have supposed that, if they would only accomplish the purpose, the smaller the better. Certainly it does not seem that larger sticks or more of them can be needed for strength, for the five small sticks I use hold the foundation so there is no hint at sagging or getting out of place. It seems to me that larger sticks would make the comb a little ridgy, which is objectionable.

He says the sticks need not be waxed; but until I waxed them the bees tore them down, and I'm sorry to say that they still do so occasionally, if but little honey is coming when the foundation is given. It looks a little as if the bees gnawed down some of his sticks, for he says one or two missing sticks after the combs are drawn out are immaterial. But I find that, when they gnaw away the sticks, they are inclined to gnaw away the foundation too.

I wish he would tell us what kind of wood he uses, also what proportion of the comb is built down solid to the bottom-bar so that no passageway is between the comb and the bottom-bar. If his way will make just as good work as mine, I think it is less trouble; and as some are inquiring about the matter it is worth while to know all about it.

Perhaps I may be pardoned for saying a word about patent medicines. Mr. Averill mentions their being used by the medical fraternity. If a physician knows the articles therein contained, there is no reason he should not use the compound. But does Mr. Averill know of a reputable physician using a patent medicine indiscriminately for all the various ills it is recommended to heal? Take any one of the best articles in the *materia medica* that

are used with best results by the profession, and put it in the hands of one who thinks himself ailing, and who believes that the said medicine is such a cure-all as patent medicines are in general represented to be, and the results would be mischievous.

The large amount of medicines taken without any intelligent notion as to their action may be credited with much of the poor health that prevails, and such medicines are usually taken in some one of the proprietary forms.

"Not every one employs a physician for incipient disease. A great many trust to the use of standard specifics," is a statement that is, alas! only too true. They might be better off to let both physician and specific alone than to swallow ignorantly the so-called standard specifics in such quantities. It is not necessarily an argument in their favor to say that such medicines can be bought "for one-half what a physician would charge for prescribing." If you save the money you would pay to an intelligent physician, and spend only half of it for patent medicine, and lose your life thereby, you're not much the richer for it. That vast amounts are paid yearly for patent medicines must be easily believed by any one who knows what thousands upon thousands of dollars are spent in advertising them.

"Many patent medicines are doing a great deal of good, else their manufacture would not be sustained by public demand." If that sort of logic is correct, then it is also true that alcoholic liquors are doing a great deal of good, else their manufacture would not be sustained by public demand!

Marengo, Ill.

C. C. MILLER.

#### HONEY IN $4\frac{1}{4} \times 4\frac{1}{4}$ SECTIONS THE ONLY SIZE.

The  $4 \times 5$  vs. Square Sections; Manufacturers who have an Ax to Grind.

BY E. D. OCHSNER.

As a producer of comb honey I wish to defend myself and brother bee-keepers against such men as Mr. Percy Orton and Mr. Massie for the part they have both taken in running down the only good section we have on the market, and as good as we ever shall have. Now, I wish to answer Mr. Orton in his article on page 679, where he went a little too far when he said the  $4\frac{1}{4} \times 4\frac{1}{4}$  sections should be taken to some swamp and stamped out of sight in the mud; also that the  $4\frac{1}{4} \times 4\frac{1}{4}$  section looks like a squatty old woman. He must remember that squatty old women are just as good as tall American ladies, and Mr. Orton ought to be ashamed to speak in that way of the fair sex, and that does not have any thing to do with sections.

Now, I can show just as fine  $4\frac{1}{4} \times 4\frac{1}{4}$  sections as Mr. Orton can with his  $4 \times 5$ , and will compete with his any day that he wishes to name; and I can sell mine in the same market with the  $4 \times 5$ , and at the same price; also can raise just as much honey to the colony. The American people will naturally buy something



new just because it is a different style, and they like to be humbugged. Now, this custom of introducing new styles of hives and sections every year is a nuisance to the bee-keepers at large, and should in some way be stopped, for they will never take the place of such hives as the Langstroth and other leading hives in use, or the  $4\frac{1}{4} \times 4\frac{1}{4}$ , 2,  $1\frac{1}{8}$ , or  $1\frac{1}{2}$  sections.

To show how many  $4\frac{1}{4} \times 4\frac{1}{4}$  sections are in use I will say that The G. B. Lewis Co., of Watertown, Wis., has sold about 10,000,000 to 25,000 of the  $4 \times 5$ , and they consider the  $4\frac{1}{4}$  undoubtedly the better section. Now, just think of the waste there would be with such bee-keepers as father and myself, with about 300 colonies run for comb honey, to discard old supers for new ones. You are doing an injury to your brother bee-keepers, instead of good. If Mr. Massie thinks the fence separators such a fine thing with his  $4 \times 5$ , he doesn't know what a good thing is. The fences are the poorest separators on the market, and that helps to knock out the  $4 \times 5$  section. I have tried almost all, and long enough. The  $4\frac{1}{4}$ , raised with a plain tin separator, will weigh a little less than a pound, which most retailers like; and a square chunk of honey looks, if any thing, better than the  $4 \times 5$  on the table.

I have been an exhibitor at the Wisconsin State Fair for the last five years, and have taken almost all of the premiums, and never heard of any preference for the new style of sections, or fault with the  $4\frac{1}{4} \times 4\frac{1}{4}$ . I think I have sold and shown my honey to more people than Mr. Massie. He might fool customers of his, but I can't mine. I have tried quite a number of hives and sections, but never found any thing as simple and profitable as the Langstroth hive and the T super with follower and wedge holding  $24\frac{1}{4} \times 4\frac{1}{4}$  sections. There are too many trying to make money out of their new hives and sections.

Prairie du Sac, Wis.

[Why, Mr. O., you are speaking for yourself. This United States of ours is too large to have any controversy or ill feeling over a matter of this kind. Before you judge your opponent too harshly, I suggest that you take a trip east and look over the market there—particularly those of Albany and New York.

You might just as well say that everybody should be Methodists, Baptists, or Congregationalists. There are some people who wear Congress gaiters, and yet I suspect a great majority will wear nothing but laced shoes. It would be folly if those on one side should say that laced shoes should be thrown into the mud and left there, simply because Congress gaiters can be put on more easily and in less time. Then, again, some farmers prefer narrow wagon-tires while others use those that are four or five inches wide, and there is another large class who, like yourself, are making a great outcry against them.

If some of the arguments on either side were to be carried out, the result would be absurdity. The simple fact is, we can not all be brought to one idea or pattern. It in no way conflicts with your interests if Mr. Massie or Mr. Orton prefers  $4 \times 5$  sections. Your prefer-

ence for the  $4\frac{1}{4}$  can not in any way affect their pocketbook.

This world should be broad enough and liberal enough to allow each one to wear whatever kind of shoe he pleases, or any particular hat that suits his fancy, or to use the hive, section, or frame he likes best.

To a "man up a tree" it might look as if what has been said in GLEANINGS in favor of plain sections, fences, and tall sections, was put in solely to grind a certain ax, the property of The A. I. Root Co.; and knowing people as I do, and judging other people as I am afraid I do, I do not blame you or anyone else for taking this view of the matter; but if you will come to our place and then take a trip east with me, I think I can show you that dollars and cents, in the case of The A. I. Root Co., was *not* the motive for putting out these sections.

While The G. B. Lewis Co. may not have sold more than 25,000 tall sections out of 10,000,000, our proportion (and you know we are nearer the eastern market) runs about 1,000,000 for every 10,000,000 of the  $4\frac{1}{4}$  sections. The simple fact is, we could make more money, and so would all manufacturers, if all bee-keepers would stick to one style of section; but *if* another kind for some people and some portions of our country is better, should we not give it to them?—ED.]

#### THE DAISY FOUNDATION-FASTENER.

Its Merits and Demerits.

BY F. GREINER.

I have received several letters this spring, asking my opinion regarding the Daisy foundation-fastener. These letters came from parties largely engaged in the production of comb honey. It seems, then, that the little machine is not fully known among the bee-keeping friends, and it may serve a good purpose to bring it before the readers again and discuss its merits and perhaps its demerits also.

In the years gone by I have purchased several foundation-fasteners only to discard them after a brief trial, falling back on the melted-resin process, although I have always considered the resin objectionable. My own experience with the Daisy has not been a very extended one; but I am happy to say I can report success. The machine does quick work, and does it very neatly. I have spent a good deal of time fastening foundation into sections by the use of wax or resin—time that was very valuable to me. I did not feel as though I could trust an inexperienced hand with this kind of work, for it has to be done just right. The Daisy may be operated by a child, and still every starter will be exactly in the right place. In fact, since I have had the Daisy I have put in scarcely any starters myself. My girl, eight years old, thinks it is just fun to work with it, and she does the work well. I can, therefore, recommend the Daisy fastener to all.

When I was using the resin method I would

first fill all my wide frames (which I use almost exclusively) with sections, four of them for each frame. In this way I was enabled to handle the sections by fours when providing them with starters, and I thought this to be an advantage; but I may not think so when I get fully accustomed to the use of the Daisy.

When we are at work now filling supers we first make up the sections. A large light crate,  $2\frac{1}{2}$  feet by  $4\frac{1}{2}$ , and  $2\frac{1}{2}$  feet high, holds just 1000. The two slats next to the top of the crate on each end are so arranged that they may be easily removed, and they are removed when the crate is getting empty. We can then reach the last section in the crate conveniently. We prefer to have the crate containing the sections at our left, the tray with the foundation starters at our right, on a box just high enough to work handily. The one operating the machine occupies a seat nearer the left of the long work-bench: the one filling the supers works nearer the right. We then work together. As fast as the sections are provided with the starters they are taken by the other. The wide frames are filled and put back into the supers, and wedged up. When one alone has to do all the work we place the sections, when ready, on little boards, pieces we happen to have,  $8 \times 18$  inches; and by placing two of the sections side by side, and two high, each little board holds nearly fifty sections. They may then be piled up quite high, and a good many may be thus stored in comparatively little space till we are ready to fill the supers.

So far so good. Now something about the demerits. Before I had used the machine at all I noticed that no provision had been made to catch any dripping wax, or keep it from running into the lamp. It is not very much wax that melts off from a little piece of foundation; but when we work right along there will be quite a little drip, and it is annoying to have it run on to the lamp. I therefore took out the screws that hold the iron plate, slipped under a piece of tin  $3\frac{1}{2} \times 8$  in., turned up  $\frac{1}{4}$  inch at the rear, letting it project over and protect the lamp. Holes were punched through the tin, and the two screws put back in their places. I now thought I had it; but, far from it. The hot accumulating wax followed down the screws—enough of it to keep constantly soiling the chimney and lamp. I finally succeeded in stopping this leak, but not without considerable trouble. I had to go to the blacksmith's. There I heated the ears of the plate to a cherry red; and with a center-punch-shaped tool driving it lightly into the screw-holes I formed two little cones with the screw-holes in the top, or apex. When the screws were inserted and screwed down they were then sitting on the tops of the cones, and about  $\frac{1}{16}$  inch above the level of the plate. This arrangement prevented the wax from following the screw. Somehow some wax would then find its way in between the plate and the tin shield, so I treated the latter in a similar way. Of course, I did not have to heat the tin. Now the machine works satisfactorily.

It might be well to mention another feature of the Daisy, that was not to my liking. Judg-

ing from the pictures we see of it, and also from the description and the wording in the price list, we are led to believe that we might easily find a lamp to fit it as the Daisy is sent out; and so we buy the machine without the lamp, especially if we should have several lamps on hand bought previously with other foundation-fasteners. But when the machine comes to hand we find it requires a lamp but about 7 inches high, which is about the height of the ordinary pearl-top chimney. A lamp of this description I was unable to find, although I searched the stores of several towns. I was obliged to lower the lamp-shelf some three or four inches, which would have been a much easier matter had the board the shelf is attached to not been scalloped out at the point where I now had to place the shelf. Had the board been left the same size all the way down it would have given an opportunity to put in the screws for holding the shelf. As it was, I had to get along the best way I could.

I offer the above suggestions to the beekeepers as well as to the manufacturers, for the latter are probably as anxious to furnish a perfect machine as the former are to receive it.

Naples, N. Y., May 22.

[For some little time we have had in mind making certain changes in the Daisy foundation-fastener; and those changes, when they are made, will eliminate the objections you have made. The plate will be made thicker, and so constructed as to carry away the drip of the wax back into a little can by the side of the lamp, thus protecting the latter from the unsightly daubing of wax.

We are always glad to get criticisms of this kind, because the combined result of them will be the perfection of each article in the bee-keeping-supply line. The Cowan extractor, for instance, has been put into the hands of practical extracted-honey producers, with a request that they criticise, which they did; and where it was practicable from a mechanical standpoint certain changes were made, so the Cowan now represents the best honey-extractor we know how to build. In the same way we are glad to receive suggestions in regard to smokers, hives, and other articles that we manufacture. Kind criticisms we consider a friendly act, and no one should hesitate to point out defects for fear we will not take it in the spirit in which it is given.—Ed.]

#### THE CRANE SMOKER.

How it Might be Improved: How to Produce Fat Sections; Value of Slats in Separators or Fences.

BY JOHN S. CALBREATH.

*Mr. E. R. Root:*—On page 171 Mr. Crane, in answer to your question about the Crane smoker, says that "the jacket broke away from the rivets." It did the same on the one I had. Allow me to suggest that, if you would put an asbestos washer between the fire-cup and the jacket (shield), and a steel washer on the outside of the shield for each rivet, the de-



fect would be remedied. Another weak point is in the neck of the nozzle. A year ago this spring, when you were three weeks behind on your orders, the joint of the nozzle gave out completely. I had one made at the tinsmith's — using the old hinge — and having the neck braced with a piece of galvanized iron on the inner angle of the nozzle. The iron (or steel it is really — after being folded double is about  $\frac{3}{4}$  inch wide and  $2\frac{1}{2}$  long. It is riveted on. When I wish to open the smoker I hit the nozzle a bat with my scraper, striking on the brace, and open it flies. No chance for argument about it.

As to that engraving on page 363, borrowed from the *Canadian Bee Journal*, you say: "This honey was produced, if I mistake not, in one-piece sections; but instead of having ordinary beeways the openings extend clear to the sides, the same as in the four-piece section." I have used just such sections for the past 12 years, and have wondered again and again why any one should want to use sections with the curved insets, especially when using section-holders. They do not allow so free a circulation of air; and as the bees deposit more propolis on them than on the sections with full openings, top and bottom, they are harder to clean.

To return to the engraving: If I mistake not, those eight sections were produced with *cleated* separators. In 1893 I began using cleated separators. In 1894 I used several hundred of them, and fondly imagined I was the only one who knew about such an effective device for getting the bees to fill the sections so that they would look plump — "fat," as some of my customers used to say. In the fall of 1895 I sent you a super containing sections ( $1\frac{3}{8}$  wide) with full openings, separators with cleats ( $\frac{1}{8}$  inch), and a wedge-shaped follower with a bee-space on all four edges, not to mention other features. I have produced a good deal of honey that would compare favorably with samples given of honey produced in *plain* sections, and the sections had the regular beeway, or, to be more exact, a *half* bee-space.

Mr. B. Taylor's article on separators, p. 210 of *GLEANINGS*, 1895, makes that point clear, and is well worth re-reading. To my mind there are five essentials to the *practical* production of honey that is well fastened to the *sides* and has a plump look: 1. Strong colonies; 2. A good honey-flow; 3. Not too much surplus room; 4. Full sheets of foundation; 5. Cleated separators. Combs well fastened and well filled at the edges *can* be produced from starters, but I do not deem it practical. Combs can be produced that look plump without *any* separators; but I do not think that practical either. In a *moderate* honey-flow, if the bees are forced to fill about all the cells next to the wood by being crowded for room I think there is a loss. That is, where a little extra honey is put around the edges, much more would have been stored if sufficient room had been given.

If, in narrowing down the  $1\frac{3}{8}$  section, you had gone further and narrowed down the tops and bottoms as well, "clear to the sides," there would have been some additional advan-

tages about it: 1. The sections would look still plumper than they do; 2. You could get them out of the cases without using a strip of veneer; 3. By narrowing the bottom-bars of the section-holders to correspond with the sections, and extending the separators down even with the lower side of the bottom-bars, those "inviting spaces" for the storing of comb and honey (which Mr. S. T. Pettit warns you against, p. 95), would be broken up; 4. When a case is open for inspection, the honey projecting beyond the edges of the top of the section presents an appearance of lusciousness that is entirely lost with the plain section.

Rock Rift, N. Y.

[It might be impracticable to use two washers to secure the jacket or shield to the Crane fire-cup; at any rate, we will try it on the next batch of smokers. As to the weak point in the neck of the nozzle, that can be remedied by using a heavier tin, which we have used of late.

No doubt you sent us honey made with slatted separators away back in 1895, but I do not now recall it, except that in a general way we have received quite a number of slatted separators and fences from different ones, for a period of at least five or six years back; but until I went to the apiary of the late Miles Morton, and looked over some of his appliances, especially some of his fences, I did not really grasp the value of that device.

As I have said several times before, just as pretty and as nice honey can be produced in beeway sections as in plain sections; but those old-style sections must be modified in the matter of the beeways. Those with the curved insets can hardly, from the nature of the case, be filled as nicely as those having a beeway clear across and partly up and down on each side. With such sections and slatted separators the filling must necessarily be just the same as the filling in plain sections with the fences. But put the two side by side, and the latter will look fatter and better filled, because the projecting sides in the former tend to make the honey stand back in such a way that the box seems not quite so full, so that it is really a matter of appearance and not of reality.

We have letters on file from a number of the principal commission firms, speaking in high praise of the plain section. That it looks well, and is usually the kind that is sold first, and in some cases, at least, brings a higher price, is claimed by them. But somehow I dislike to speak of these things, because it looks as if they were said for the sole purpose of grinding that old ax. But shall facts be concealed that stand a chance of putting money into the pockets of bee-keepers?

Since basswood timber, like all other timber, is advancing so sharply — nearly a third — it begins to look as if there ought to be a difference in price between plain sections and the old-style with beeways; for the latter, taking more timber, and more labor to make, of necessity cost more. If in the future the plain sections shall be cheaper, and under like conditions will appear to be better filled, then

he who consults his purse will not hesitate as to which style to select.

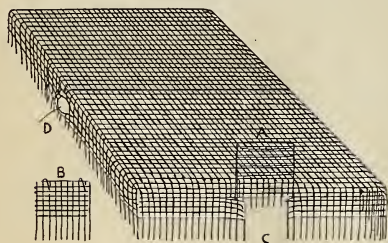
But narrowing the top and bottom bars of plain sections, as you suggest, would be a step backward. While it might make the sections look a little plumper, as you say, it would be almost impossible to handle them, for sections are ordinarily handled by the top part; and if that is so narrow as to be even with the face of the honey, the thumb and finger would be almost sure to gouge into it in handling. At one time we thought it necessary to use veneer strips to separate plain sections in the shipping-cases; but we now find that is not necessary.—ED.]

### NORTON'S IMPROVED INTRODUCING-CAGE.

How to Construct, etc.

BY A. NORTON.

*Friend Root:*—Referring to an article on introducing queens, by W. Z. Hutchinson, in *American Bee Journal*, with illustration of cage for confining a queen against the comb, and his references to similar matter in GLEANINGS, whence he borrowed the illustration, I wish to send you an illustration of the way I prefer to make these cages. Mr. Hutchinson lets the queen in by raising the cage slightly and putting the shipping-cage under it, and



letting the queen into it, after which he withdraws the shipping-cage and presses the other down into the comb. I once ruined a queen in that way because she was too lively, and she crawled under the sharp wires and was pierced by them. Again, I have lost queens by the sudden removal of the cage when I thought accepting time had come, the queen being scared, and the bees irritated by the jar of taking the cage out of the comb. I did not like to mutilate the combs by cutting an exit. I have been very successful with the modification I send you.

I make a little hole in the cage at the outset. In the diagram sent you I put two forms in the same illustration, to save space, only one being needed. I pierce a hole with a leadpencil, or any similar kind of punch, as at *d*. I then make a little gate of wire cloth, *b*, which is unraveled at the bottom, clinched at the sides by bending back the wires and at top the same, saving two or three of the projecting wires, which I bend partly down forming hooks. The bottom presses into the comb, and the hooks at the top catch into the wire cage so as to hold the gate secure. *A c*

shows a square place cut from the cage instead of the hole *b*.

With the cage well set into the comb, and no bees inside, I hold the shipping-cage down with the little entrance open, the cork being removed, so that a nice passageway into the introducing-cage exists, and with a slight puffing of smoke I drive the queen alone, or queen and bees, into the latter. I then put on the gate over the hole, and all is secure, with no risk of injury to the queen. When I am ready I can remove the gate (that is to say, when the bees will accept the queen), and replace the frame, leaving the queen to get out quietly. I like the hole and gate *d, a*, better than the others, *a, c*, which I have tried as well.

If desired, one can insert a tinfoil or paper roll of queen-candy at *d* for the bees to eat their way into the cage in a given time, the roll being outside the cage. However, I have been very successful without this. I have had uniform success with this form of the cage, though I do not introduce queens by any one method entirely. I have recently had them safely accepted within 12 to 18 hours after putting them in from the shipping-cage in three instances, although no honey was coming in. It is well to have the abdicating queen caged in the same cage and place a while first. But it is not safe, generally, to try to do the work so soon. If one prefers the square cut as at *c*, the gate may be either slipped in through slits, as illustrated, or go on over with hooks, as at *b, d*. These cages may be laid away for future occasions.

Monterey, Cal., Aug. 1.

### SMALL VS. LARGE HIVES FOR COMB HONEY.

BY D. N. RITCHEY.

As I take up the subject of small hives I wish to correct the editor in thinking that I have not tried large hives. I have tried hives holding from 3 to 14 frames, side by side, year after year, and now I will give you a short history of my life in bee adventures and experiences, which will give good reasons why I advocate the small hive for comb honey.

I have loved the bee from my childhood to the present hour, and expect to do so until Mr. Dadant and I meet in that land where the sun never sets, and where the only nectar-gatherers will be—*Apis dorsata*, if you please.

The summer I was twelve years old my father promised me the next swarm if I would find a hive to put them in. Of course, I agreed to do that. My father and grandfather were bee-keepers. My grandfather would take me on his knee, and say to father, "This boy will make a bee-man some day." I went to a carpenter and told him what I wanted. He said he would make me a hive, and asked what kind I wanted. I told him I wanted a hive that did not take so much honey to fill the lower part, so the bees could put honey in the boxes above sooner.

"All right," said the carpenter; "I will make just the kind that will suit you." So



he made me a hive about  $12 \times 11 \times 10$  in. deep; and in the early part of June my sister and I, while hoeing sugar-cane, caught a swarm coming out of the woods, and placed them in the new hive. Now for a point. This swarm filled the brood-chamber and gave me 50 lbs. of surplus, while my father's bees, on the same platform, gave not a pound. They were in hives more than twice as large as mine. Year after year we had the same experience.

Again, there lives a man, a bee-keeper, near Hanover, who has his bees in boxes that will hold about eight or ten bushels, and they swarm, and give surplus honey only once in five or six years. Here is a point I wish to have you notice: While I was there, fifteen years, only once in all that time did the large swarms, which came from those boxes, gather a sufficient amount of stores to winter on. When spring came they would have a lot of empty comb and dead bees. Again, in 1894 I bought three hives of bees of a man, and he told me he had not got a pound of honey from them in ten years. I took them home and put them into a hive half the size that they had occupied, and that same year they gave me over 100 lbs. per colony. When I saw the man, and told him what the bees had done, he held up both hands, and exclaimed, "My goodness! how did you do it?"

I can give you many instances just as good as this. During the last few days men have been coming to me for sections and foundation, saying they have hives with brood-chambers  $12 \times 12 \times 8$  inches deep that have their supers filled, while they have other hives  $16 \times 19 \times 15$  inches deep, with no surplus. Are not these good reasons for advocating small hives?

Again, this spring I saw which will swarm first. The nine-frame cast the first swarm by 12 days. The large hive swarmed without a pound of honey in the super; the small one, with 24 well-filled sections. Again, neither Mr. Dadant nor any other man can possibly get the bees in a large hive to re-enter the surplus-apartment as soon after taking off the sections as he can with a small hive. In a small hive, if properly ventilated, the bees are compelled to go above for room, while in a large hive they have plenty of room below. I do not see how any one living in a latitude like this, where honey-flows are of such short duration, can advocate a large hive. It is simply impossible to be successful.

As my article is too long I must describe the size and kind of hive some future day. We know the farmer bee-keeper can not use the same kind of hive that the man does who makes the bee-business a specialty; and the point of locality must not be lost sight of.

Granville, O., July 3.

[In GLEANINGS for Aug. 15, page 611, you will find that we have summed up this whole hive question. In a word, the size of the brood-chamber depends largely upon the locality, and, secondarily, upon the bee-keeper's peculiar notions. From the mass of evidence that has been produced, I believe large hives are not practical in some localities, in the same way that small ones are not adapted for others.

Manufacturers might as well give up the notion that bee-keepers can be driven like a flock of sheep over one road — the road denominated the eight-frame Langstroth hive pure and simple.

The proof of the pudding is in the eating; and where large hives give big results in dollars and cents, it is folly to talk small hives; but when the small hives will outstrip the big ones, as seems to be the case in your locality, it is penny wise and pound foolish to discard small for large hives.—ED.]

## BEES IN THE SANTA LUCIA MOUNTAINS, CAL.

A Splendid Location for Bees.

BY C. M. DRAKE.

My school trustees have the bee fever. They caught it late last season, and have not yet recovered from it. We live near the Pacific Ocean, in Monterey Co., where is one of the grand bee-places in California. There were no bee-men here when I came to take the school in April; but by silver speech and golden arguments about what bees must do in such a range I got my trustees to making Langstroth hives and taking wild bees. They had never seen a Langstroth hive, but they knew bee-trees. It is hard to say whether they believed less of my tales of immense crops in Southern California or I their stories of bee-trees. But when I saw five colonies in one big redwood, I was forced to believe that a story of robbing seven colonies in one tree, and taking out boilers and wash-tubs and coal-oil cans full of honey from one tree, and leaving lots they did not care to take, might be true. And there are bee-caves in solid marble homes, from which come streams of bees — well, somewhat less than the Mississippi in size.

"I suspect your honey season may run into July here," I remarked.

"August is our best honey month," was the astounding answer; and, though I have not found it quite so, the bees at this date, Sept. 13, are rapidly building combs, and making honey fast. They could be extracted now, and would fill up. Last Saturday I took a swarm from a white-oak stump. Two months before, we had taken from that stump the worst stingers I ever saw. We got the queen, two cans of honey, a hiveful of bees and comb, and brought them home. Far in a root were a few little patches of brood, a handful of bees, and no honey except what we left on the sides of the sawed-off stump.

They raised a queen whose bees are very gentle. I went there last Saturday with a five-frame hive, took out the bees, and brood enough to fill one frame (the rest was in too broken pieces), to carry three miles, and I carried them to my schoolhouse. In an hour they were flying out to work. In a week the quart of bees have built nearly two frames of comb, and filled them with eggs. They will, I doubt not, live through the winter, and be a fair colony next spring. We had to put supers on three of our hives within this week.

They are now building comb and storing honey rapidly there.

This strip of coast, you must know, is an evergreen land, and they tell me bees can make a living any month.

"I knew where sixty or more bee-trees were; but the fire last year killed most of them," said my trustee. "But I think I can find some more," and so we did. Every Saturday we took a bee-tree except when I was busy at shells. We have 16 colonies now, and I don't wish to tell how much honey we took out; and, earlier in the season, it was beautiful honey too. As for bee-trees and bee-caves, they are so thick that you can't help finding them. They ride around, guess that yonder redwood, pine, or oak, might be a bee-tree, ride up to it, if accessible, and often find another tree on the way. I do not doubt there are 100 now left within easy reach of this house. Not *easy* reach—that is not true. This is one of the roughest, wildest mountains I ever saw—no roads and trails to make your hair and horses stand on end. When my landlord says, "The tree is a little hard to get at," I leave a letter of farewell to be forwarded to my wife in case of accident. Even 1000 or 2000 feet of climbing is nothing in going to a bee-tree here. You are lucky not to have several such climbs. I kept bees in Southern California for ten years, as old files of GLEANINGS will show; but in some ways this beats any other spot I ever saw; but it almost kills a man to get in and out. They have wonderful gardens and orchards here too, and a steamer once a year to bring in fresh groceries. When they wanted honey they went and cut down a bee-tree, any time of year, took the honey, and let the bees rustle. They did not want bees; there were lots of them; and as for saving the wax, they never thought of it. By the way, we had to make our hives by cutting a redwood-tree and splitting the hives out. One good tree will make, I estimate, 500 or more hives.

Gorda, Cal., Sept. 13, 1899.

#### BEE-KEEPING IN CUBA.

Are Once Robbers Always Robbers?

BY HARRY HOWE.

As my experience here is limited by a few weeks I will attempt no general view of the situation. There are, however, some particular points upon which I wish to write. At the Philadelphia convention there was some discussion as to whether robber bees ever return to honest ways. When I got here and saw robbers thicker and more aggressive than I ever saw them at home I went at it to see what the facts were upon this point. About the only bees flying very much after it gets hot in the forenoon are those shiny black fellows—professional robbers it may be.

At this time a walk through the fields will show but few bees upon the blossoms, and a good share of these are those identical "robbers." This is true, not only near the apiary, but as far away as I have found bees. These

fellows are such a small minority of all the bees, that, in a time when the bees generally go to the fields, it is hard to find one on the blossoms.


Another point I should like the advocates of the "once a robber always a robber" idea to explain. What becomes of them when a honey-flow commences suddenly, as it often does, from basswood for instance? One day the robbers may follow one around the apiary by the hundred, pitching into every hive that is opened. In a day or two basswood is out, and one can leave honey anywhere in the yard, and not a bee will look at it.

I am feeding considerable here now to stimulate the bees for the honey harvest in November. It is a sticky, mussy job at the best to feed each colony separately in an apiary of 200, so I have tried the plan of taking a hive-body, with enough combs to keep a Miller feeder from dropping through; set it up a few inches from the ground, with a feeder full of honey, and water on top. A row of them are set in some bushes in one corner of the apiary; and as fast as they are emptied by the bees they are filled up again. When the feeders are on the hives there are always robbers hanging around trying to get at the honey, which they smell. By this method they seem to act about as they would if the honey came in from the fields.

The home yard here, instead of being under sheds, is in a dense grove of tropical fruit; then when the apiarist feels like it, all he has to do is to reach up and knock off the kind he likes best.

There is also a hammock under the shade of a wide veranda to the tool-house, where there is nothing to detract from the enjoyment of the almost constant breeze but a Spanish grammar. Senor Ranelo, with whom I am, speaks but a few words of English, while my first start in Spanish was on the way down.

There is no one within several miles who does speak English. This makes me take Spanish grammar in larger doses than I should otherwise.

I have a fine boarding-place and two large airy rooms, one of which I have fitted up for a photographic dark-room, where I spend many of my evenings trying to get the hang of making good pictures where the well water stands at 75° and gets to be 85° very soon in my washing-tanks, etc. Just enough of the plates make good pictures to keep me at it. 

[If any one has ever seen real robbing at home it is Harry Howe; so you can imagine the robbing must be pretty bad in Cuba. In Straws in this issue this same subject is referred to; and while I think we may conclude that bees that get into the robbing habit can and will gather honey like other bees, yet they are not quite the same bees for getting an honest living that they were before they got into the bad habit. A drunkard may reform; but he is never quite the same man afterward that he was before. The old craving is there, and the old sinful desires just the same, although, perhaps, held under control.—ED.]

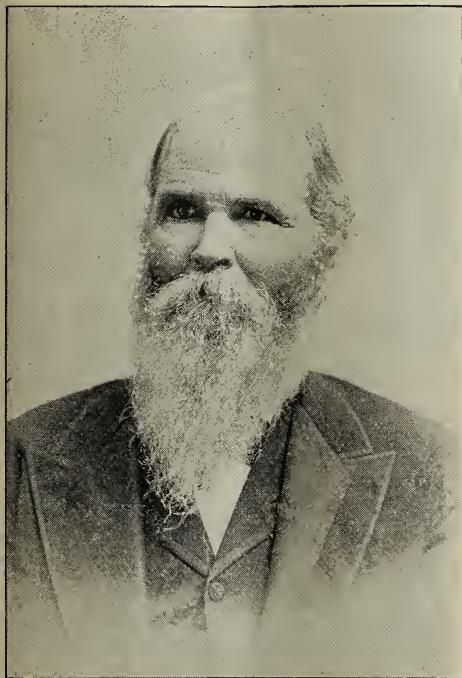


## RAMBLE 177.

At Mr. Elon Hart's; the Pasadena Ostrich-farm.

BY RAMBLER.

The beautiful city of Pasadena (the crown of the valley) is but a few miles from Los Angeles, and nestles close to the foot of the Sierra Madre Mountains. Good wagon, elec-



MR. ELON HART.

tric, and steam roads connect the two cities, and now a cycleway is under construction. The roadbed will be of Oregon pine, ten feet wide, and protected on the sides by wire netting. Electric lights at the proper time will flash on either side at intervals of every few yards, and, when completed, it will be the grandest thing in the world—so the local papers say.

Mr. McNay and I could not wait for the completion of this cycleway, and we rotated ourselves over a fairly good road to Pasadena. Many bee-keepers find here congenial and happy homes in the fragrant shade of the orange-trees and the climbing roses. It was here in the flower-embroidered crown that Mr. C. A. Hatch and family, of Wisconsin, made their headquarters during their stay in California; and since their return east I understand that they are pining to return again to live among the roses. This is always

to be expected; for when a person makes a short sojourn here in this favored clime he is quite sure to get back some time, and that is what we may expect Mr. Hatch to do.

Mr. Farr, who moves his bees to Utah by the carload, and clears thousands of dollars by his enterprise, also owns a flower-embowered home here. Our journey was aimed toward the residence of Mr. Elon Hart, one of the most prominent bee-keepers in Southern California. He has a nice residence within the city limits; can sit at ease under his own orange-tree; has sons and daughters and grandchildren to rise up and call him to dinner. Mr. Hart has about 150 colonies of bees, and during a greater portion of the year they are kept in the home apiary. The bees get a good start, and sometimes much surplus from the orange and other fruit bloom; then the apiary is moved to the hills to catch the sage bloom.

I am inclined to think that Mr. Hart would have struck a good thing if, several years ago, he had started into the manufacture of bee-keepers' supplies, for he is a good manipulator of tools; but the only thing in the mechanical line that he has attempted is the manufacture of foundation, of which he has made several tons for the bee-keepers near him.

Mr. Hart held the office of foul-brood inspector for Los Angeles County for several years, but he has lately retired from the position, and there are no complaints rising up against him.

He is part owner in the right to manufacture and sell the Heddon hive for several counties of Southern California; but the manufacture and sale have never been pushed; and now Mr. Hart, instead of using the regular Heddon frame, uses a frame with closed ends, but deeper than the Heddon. This seems to be satisfactory, and it is in line with the ideas of several bee-keepers who seem to be level-headed. After experimenting upon several sizes of hives, they have in use a frame about 7 inches in depth, and using nine or ten frames in a hive; and we are assured that their hives are the very best for the development of the swarm and the honey crop. But



MR. HART'S APIARY.

no hive or bee or bee-keeper has yet been found to flourish during the dry seasons of



Southern California, and, as a consequence, a number of Mr. Hart's colonies have joined the great majority, where the seasons trouble not and where the bee's sting is folded for ever.

We found Mr. Hart a little blue over his losses and the prospects, present and future; but he was holding up remarkably for a man of his age. The storms of many winters in the East, and the sun of several summers in

something that he can not do in Wisconsin. He is picking oranges. When we left the Hart grounds our pockets all had a bulge on them from the number of oranges stowed away in them. We hope many days yet to the sage of the Sierra Madre foothills.

Upon our return the Pasadena ostrich-farm lay directly in our route, and a call there was not devoid of interest. There are a great

many fine things in Wisconsin to boast of, but Mr. McNay could not brag about Wisconsin ostrich-farms. That is where we get the best of Eastern people, we have such unique things out here. The ostrich is a unique bird, rather overgrown, and a hundred of such feathered monstrosities give the spectator a unique feeling, and a large male ostrich can make things about as lively as a colony of cross bees. The ostrich is a tall bird, and some of the specimens here are fully twelve feet in height, if not more. They are so supple that they can pick buttons off your shoes or an ornament from the hat, with but little effort in bending. They all

have an excellent appetite, and their daily rations are alfalfa and carrots; but they are not particular what they eat. A lady stood near the corral one day, and the ostrich under observation grabbed her gold watch. The attendant saved it; but had it not been for the attendant the watch would have gone the way of the carrots. Sometimes they take a notion that a man's nose or his ears would make a fine tidbit; then there is a scene. It is said that one minister of the gospel, upon being



UNDER THE ORANGE-TREE.

California, and the many stings from the lively little bee, have whitened his locks; but what of that? his faithful wife is ready to console him; his unmarried daughter ready to bring him his hat or his slippers. (H-u-m, h-e-i-g-h-o! let me see; where was I at?) Oh, yes! and he has a son to start the fire in the morning, and grandchildren just old enough to pull his whiskers. Besides these advantages he has the money he has earned from his bees salted down in city lots, etc. There is no earthly use for Mr. Hart to have the least shade of blue; but bee-keepers will do such things in spite of the good circumstances with which they are surrounded.

Mr. Hart is decidedly in favor of the Carniolan bee, and quite a number of his colonies are of that race. They gather more honey, sting less, and are on that account a more desirable bee for city life. This is a point that city bee-keepers should take into consideration. Much of the trouble which arises from keeping bees where the neighbors are near and plentiful comes from having a strain of cross bees. A bee-keeper not far from Mr. Hart's owned about thirty colonies of bees, and one night had them all tipped over, and some of them ruined, just because a child was stung by a few bees. Instead of stirring up the whole neighborhood, Mr. Hart's Carniolan bees allow his grandchildren to take many liberties in their vicinity, and no stings received.

I herewith present photos of Mr. Hart and his apiary, also a snap shot of Mr. Hart, Miss Hart, and Mr. McNay. The latter is doing



"A KID IS LOOKED UPON AS A CURIOSITY."

severely interviewed in that way, actually took the two D. D.'s from the rear of his own name and placed them in front of the ostrich's name. It is also said that he can not talk ostriches since, with equanimity. Buttons on the coat, or, in fact, any thing that appears transferable, is welcome to the ostrich. Their



necks are very much like the average politician — have no backbone, and they can turn their heads clear round so quick as to almost look themselves in the face. The only way to subdue an ostrich is to wind his neck around his legs and tie it in a double bow-knot. The ostrich never smiles, and takes every thing for granted and many things that are not granted. His means of defense is his foot, and he kicks forward just like a man; but, what a kick! He will kick a board off a fence and into kindling-wood. Bill McKinley (that's the name of the big ostrich) got angry at some cross-eyed remark his wife made, and he killed her with one kick. The ostrich does not sing, cackle, or quack. It has an inclination to be sociable; but when the words start from the lungs they evaporate before they reach the head (wonderful provision, especially in the *female* ostriches). His life is regulated almost altogether by dumb signs; and only when angry will the male ostrich give utterance, and the attendant said it was not unlike the roar of a lion.

A little whiffet of a dog not so large as a pint of cider will scare the life out of an ostrich, and make the whole flock run around the corral like race-horses. A kid, however, is looked upon as a curiosity, and handled as such. I have a notion that the ostrich will, after all, find his sphere in some reformatory where these refractory kids are trained. Kids are so loath to fall into the care of an ostrich the second time that they are very good as long as the ostrich is in sight.

When an ostrich tips his head up sidewise, cocks his eye and drops his under lip, you can always know that he is fixing for a grab, and you may regulate your life accordingly.

The ostrich is a queer bird, and is put to a queer use — just growing feathers to adorn ladies' bonnets. They look pretty, of course; but isn't such adornment a relic of barbarism?

The charge for admittance to this farm is two bits; but when a man's wife accompanies him he hardly ever comes out without having paid five or ten dollars for feathers. This is another point where the man and the ostrich resemble each other — the ostrich is plucked, and so is the man.

This kind of poultry would not work well with an apiary. If the hives were not swallowed as an article of diet they would be kicked to splinters upon the least provocation. Then a good feather-bearing ostrich is worth from two to three hundred dollars; and what bee-keeper can launch out money at that rate to stock a farm? Mr. McNay, the wealthy bee-keeper of Wisconsin, might; but, alas for us Californians! after these two dry seasons there is not one in ten of us who feels able to buy a Shanghai rooster. There can be much more said about the ostrich, but probably the above is about as much as the bee-keeping world can stand at this time.

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X. B. L., *Quebec*. — As to the best French bee journal, that is a matter of taste. Probably Bertrand's *Revue Internationale* would suit you. It is printed in Nyon, Switzerland.

## THE REFORMED SPELLING.

The Reform to be Accomplished Step by Step, and Not by Radical Change.

BY E. B. THORNTON.

I am glad to learn that you are in favor of the short spelling, though you do not yet see your way clear to adopt it. I note, however, that you do adopt many short spellings. See the following from the July 1st issue: Catalog (formerly here and in England still spelled catalogue); also neighbor for neighbour; plow for plough; center for centre; wagon for waggon; color for colour.

I do not know how many more might have been selected. It all depends on the point of view. The more ancient the book or manuscript you compare it with, the more does modern English depart from what was once considered correct.

The "taste" of Milton or Shakespeare would doubtless have been greatly "offended" by the spelling on any page of GLEANINGS or the *Review*. It seems to me that a man who wants to do right will find in this subject not a question of esthetics, but one of ethics. The schoolchildren of England and America are robbed of two years of their school life in order to learn something that might better be left unlearned.

The editor of the *Independent* puts the matter in its true light when he says that the whole matter is one that "properly belongs to the societies for the prevention of cruelty to children." "The weariness, the tears, the blotted copybooks, the nervous strain we put on our children, are our shame." . . . "We are often told that our children are far more backward than the children of other languages. How can it be otherwise? The time that we waste in learning to read and spell, a German or Spanish or Italian child can give to his arithmetic and geography."

. . . "Many more children could go to the high school and to college if their years and their patience had not been exhausted in useless labor at the very threshold of learning."

Then why not try a little more of the new spelling, in GLEANINGS? You will not be long alone. Spelling reformers are making special effort to promote the orthography of the following list of words as recommended by the National Educational Association:

Program (programme); tho (though); altho (although); thoro (thorough); thoro fare (thoroughfare); thru (through); thruout (throughout); catalog (catalogue); prolog (prologue); decalog (decalogue); demagog (demagogue); pedagog (pedagogue).

This list is small; but as a rallying-point it is important. If we can not reform these spellings we can not reform any. We want our friends to show their colors. In union there is strength. The true friends of the reform do not neglect small opportunities while waiting for larger ones.

Pitman tried for fifty years to make a complete job of it on a thoroughly phonetic basis, and he accomplished little more than to call attention (not always favorable) to the subject. American reformers in the meantime

have brought forward not less than a dozen different systems, but no one would adopt them. The trouble with them all is that they are *too* good. They go too far. The only advance that has ever been made on this line has been made by the step-by-step method—a word or a class of words at a time. The new must grow out of the old. The old system is not, as Mr. Hutchinson says, radically wrong. English spelling has a phonetic foundation. It is the details that need tinkering with. It is in everybody's power to do a little tinkering. Nobody has the power to effect a complete reform.

Addison, N. Y., July 23.

[Personally we (the Root Co.) approve of the changes suggested by the National Educational Association; but we do not know whether our readers would sanction it or not. For an experiment we will lay the matter before them; that is, we should like postal-card votes on the matter. All those who fail to vote, we shall assume have no preferences one way or the other, so that a majority of those who do vote either for or against may decide.

These changes are very moderate, and are not such as would shock the average reader. I have always felt, however, that to spell the word *past* for *passed*, and carry out this rule all through, was perhaps going a little too far, because it includes such a very large class of words, and really saves but little in the way of type; but when, for instance, we can omit *ugh* from the words *though*, *although*, *through*, *thoroughfare*, etc., *ue* from *catalog*, *decalog*, etc., and *me* from *program*, then we are making a step in advance, and about as big a one as would seem to us wise for us to take. We have already begun it by spelling *programme*, *program*, *catalogue*, *catalog*, and none of our readers have interposed or objected. Now, will they if we go one step further? I feel that we can hardly be in sympathy with the movement for shorter spelling without at least putting that sympathy into tangible form.—Ed.]

#### EXPERTS VS. AMATEURS.

How the Veterans Sometimes Mislead.

BY R. A. LAPSLEY.

Not long ago I was talking with a veteran schoolteacher about text-books for beginners in Latin and Greek. He expressed the opinion that eminent specialists, scholars like Gildersleeve, for example, are incapable of writing text-books for beginners. They have gotten so far along in "high larnin'" that they can not bring their minds down to the simple modes of thought which beginners need. Whether my schoolteacher friend was right as to Latin and Greek text-books, I leave the learned to decide. But it seems to me I see something of this sort in the bee-journals. When the man who has been handling bees for 20 or 30 years, making his own hives, inventing bee escapes, queen-traps, and

what not, undertakes to give us beginners "a certain and practical method" for doing something, I feel like saying, "Yes, 'certain' under *your* eye, Dr. Miller, and 'practical' in *your* hands, Bro. Doolittle." And I feel more like saying something of this sort to-day than ever (only in this case neither Dr. Miller nor Mr. Doolittle is in it). I have just returned from gazing upon the cold "corpus" of a valuable queen that came to her end through her master's infatuation with one of these "certain and practical methods." I got this queen a few days ago from a noted breeder, and did not wish to lose her, so I tried the introducing-cage recommended by F. Greiner, GLEANINGS for Oct. 1, 1898, page 727. If the reader will take the trouble to look up that number his eye will be caught, as mine was, by the good looks of that queen-cage. Take a careful survey of those raveled ends of wire projecting from the bottom of the cage. They look in the picture like ten-penny nails, or even railroad spikes. You could stick them through an inch plank, much less a soft bit of wax like a bee-comb. So it looks; but just make a cage and try it. Those spikes turn out to be limber wires with just a little more penetrating power than a piece of string. You manage to get your queen inside of the cage without pulling her head off or daubing her up with the honey those innocent little wires have set running. You "firmly imbed" the wires into the comb, so you think, and you leave your costly queen in this death-trap among her eager enemies. You look on the third or fourth day to find your queen — *non est* — in plain English, murdered, and the bees which have gnawed out the comb from around your "safe and practical" cage, playing hide and seek among those same seductive little wires.

I don't know whether this brief narration will display the misleading advice of the experts, or the awkwardness of the amateur. I leave that for the editorial footnote to pass upon.

Greenville, Va.

[There is a good deal of truth in what you say with reference to those who write text-books on Greek and Latin, and even on mathematics. I remember once an instance where a certain professor in mathematics was almost a failure because he saw every thing at a single glance, while the average pupil under him would have to go from one step to another to follow out a difficult train of reasoning in the solution of a mathematical problem. Whether instructors on the subject of bee keeping are guilty of any of this same fault is doubtful; but if they are, it is in being too positive, sometimes, in laying down certain rules. In reference to the method of introduction, I thought myself that Mr. Hutchinson, when he called it "a certain method of introduction," was putting it on a little too strong. But your trouble, I think, was occasioned by the fact that you made too long the strands in the wire cage, and that you pressed the cage at a spot where there was too much sealed honey, causing drip to run down on the queen.



It should be pressed over hatching brood having a few cells of honey here and there, so as to give the queen a supply of food as well as an accompaniment of young bees.—ED.]



#### DO BEES SELECT A HOME BEFORE SWARMING?

*Question.*—Do you think that bees select a place to go to before the swarm leaves the parent hive? The past summer I had a swarm come out and go direct to a tree in the woods, without even stopping to cluster. I think that they had their home selected before they left the old hive; but my neighbor says that bees do not know where they are going when they come out in swarming time; for if they did, swarms would not cluster at all.

*Answer.*—In regard to bees selecting a home before they swarm, there seems to be a difference of opinion, some claiming that they do select it, while others are equally sure that they swarm without any knowledge of where they are going. In most cases, probably, the latter view is correct; for swarms have been known to come out, cluster, hang all day and over night, travel a few miles, then cluster again, and so on for a week or more before they found a home anywhere; yet I am positive that some swarms do select their future abode some days before they swarm. When but a boy I many times saw bees searching the body of large trees, about every knot-hole or crack, which stood on the edge of the woods near where I was at work, as if looking for some place to enter; and at that time I remember wondering what they were doing. Later on the same thing was witnessed, only at this time the bees were actually going in and out of a hole in a very large tree, as well as looking over the trunk of the same. In this latter case the bees were seen for several days at work during the middle of the day, the bees going and coming from the hole about as bees would work from a weakly nucleus; while in the morning, and after five in the afternoon, no bees would be seen about this or any of the trees. A few days after that, a swarm came out from one of the few hives which father kept at that time, and went straight to this tree without clustering at all. From this I felt sure that in some instances bees did select a tree to go to before they left the parent hive; but after having bees of my own, and seeing them cluster soon after they had come out, for hours, and in one instance stay till they had built considerable comb, I did not know what to think in the matter. At about this time a party living about four miles from me purchased the Italian bee, and with him I went into partnership in queen-rearing, in my early bee-keeping life, so was with him considerable of the time. He told me, one day, that at an out-apiary which he was working, which con-

tained only black bees, he had noticed in the forenoon Italian bees at work cleaning out an empty hive which stood near one side of the yard. This was something new to him, he being considerably excited about it. He said he should keep watch of the matter and see what became of it. I was also much interested, and told him what I had seen, as related above.

The next time I went there he told me that the bees which he saw cleaning the hive were his own, as he had surmised after I told him what I knew in the matter a few days before; for at that time his bees were the only Italians within four or five miles of his residence. He said that a swarm came out from one of his hives, and, after circling around a few times, started off in the direction of this out-apiary. Having a fleet horse near at hand, and being a fearless rider, he jumped upon it, and in a moment was going at railroad speed for this out-apiary, arriving there in time to see his swarm of Italian bees rushing pellmell into the hive that the bees had been cleaning out. As he kept the wings of all his queens clipped, he knew that he could soon tell for a certainty whether these were his bees or not, although he had no reason to doubt the matter now; for if they were he had their queen at home in a cage, and sooner or later they must return to her unless they had come across some queen in their flight. In about half an hour they became uneasy and began to leave the hive, seeing which he returned home only to find them coming back and running into the hive from which they went, and clustering about the cage containing the queen which he had left at the entrance of the old hive. He now liberated their queen, and the next day they swarmed again, and again went to this hive at the out-apiary as before.

This was kept up for four or five days, when he became tired of it, and then he divided the colony, thus putting a stop to their swarming. The above instance can not be accounted for in any other way than that the bees had selected their future home before leaving the parent hive; but that they always do thus is by no means proved by these incidents.

My opinion is, that where one swarm thus selects its future home before leaving the parent hive, ten do not thus select, but go out without any idea of where they are going, and, after clustering, send out scouts in search of some suitable place for a home. If the scouts fail in finding such a place, the swarm unclusters and moves off from three to ten miles, when they cluster again, and again send out scouts, thus clustering and sending out scouts until a suitable place is found. If a rainy day or two come on while they are clustered out on a limb, they build some comb; and if the weather is warm, and plenty of honey is to be found near, when the weather clears up again they may cease to look further for a home, and may make a home of the limb, rearing brood and storing honey the same as if in a hollow tree, a cleft in the rocks, or a hive; for the cases are by no means isolated where colonies have been found with plenty of combs, brood, and honey, for wintering, with nothing

to shield them from the elements save the twigs and a few leaves above them. I have a queen in my yard now whose mother's colony thus made a home in a grapevine, secured by a bee-keeping friend in New Jersey.

### A LIVING BEE-HIVE.

BY LOUIS SCHERFF.

I always hat a great bassion for pees—  
Ya, much more as for lager unt Limburger cheese.  
I shpent, von time, a whole lots of money  
For two hifes o' pees vot gif lots o' honey.  
I pought poxes for de new young swarm  
Vot comes out in der shpring, ven'ts warm;  
Unt ven I hifed 'em it seemt efry von pee  
Hat daken a special liken to me.  
Vy! somdimes da vould all offer me grawl,  
Unt nefer vould shting me much at all.  
But der las' dime I vant to dell you 'bout,  
I vos, like Sullivan, gombetely nockt out.  
It vos in der early bart of der mont of Shuly,  
Unt der vedder vas very varm unt dry.  
Dat day I vos shoost goin' up town.



Ven a shwarm of pees hat seddled down  
On de lower limb of a mable tree  
Vot shtoot on de lawn of Mrs. Free.  
My first imbuls vos to get me a hife  
For to put 'em in, und dus deprive  
Somebody else from daken 'em in,  
Aldough I knew 'twould be a big sin  
To take efen so much as a shwarm of pees  
Vot in Shuly isn't vort two fleas.  
Yust as I vos about homeward to turn,  
Mrs. Free came out und said dey ver hern.  
"All ride, Mrs. Free," said I politely. "Dat vill do.  
Vill you be so kind und let me hife 'em for you?"  
"Indeet, my friend, I could hardly ask it."  
"Nefer mind, Mrs. Free; pring me a pushel pasket  
Unt a nice glean pox, or a pee-hife.  
Den I shake 'em in de basket, unt den drive  
Dat whole shwarm in de pox. Dat vay can be seen  
If dose pees got some drones, unt also a queen."  
De pasket unt hife ver soon on hant,  
Unt mit dat pasket in von arm, dook mine shtant  
Unter dat limb where dose pees hung,  
Unt shook 'em in, mitout pein' shtung;  
Ven, insteat in de pasket, on trough dhey did roll  
For dat pasket poddom hat a big hole  
Vot in mine hurry I hat not seen.  
Unt let dem pees trough shlick unt glean.  
I vos poody mutch suprised indeet,  
Ven I saw dat hole shwarm down on my feet.  
Do you know dat a pee vill always strife  
Ven it's down to crawl up into de hife?

Dhey musty supposed me someding like dat;  
For a good deal quicker as you can say "scat"  
Dat whole shwarm dook der very first chance,  
Unt movet up into der legs of mine bants;



Unt as der vedder vos very varm unt fair,  
I hat on only dat von single bair.  
Bout a dozen of vomen from dat neighborhoort  
By de fence unt on de sidevark shtood;  
Some on de lawn, unt under de trees,  
Vatching me hife dot shwarm of pees.  
Ven dhey saw mine awful perdicament,  
Not von a helpin hant vould lent;



But all of 'em cried out in fright unt fear,  
"Mr. S., don't you dake your bants off here."  
To arcu de case, I saw vould do no good,  
So I shtarted for home as quick as I could;  
Vitch, as luck vould haf it, vos only half a square,  
Else I vould a died before I'd a got dare;  
For efry shtep I dook my bants vould shqueese  
Poody hart against dat shwarm of pees.  
Den dey vould sent der shtings into mine skin,  
Unt I'd shump like a poy on a pent pin.



When I reached home I told mine vife  
 Dat I vas der only lifing, valking pee-hife.  
 Ven I pegan poody quick to take off my bants,  
 I got shitting some more on my face unt my hants.  
 Put she ran behind de lace curtain to hide,  
 Unt lafft till I dought she'd shplit her own side.  
 Dat made me so mad dat I pegan cryin  
 For her to come quick—dat I was a dyin.  
 Dat sheared her. She crabbed de bants from de floor,  
 Mit dem pees in, unt shlung 'em out of de door.  
 Soon mit a broom she hat de rest all dead,  
 Den she helped me shently on to mine ped;  
 Unt for half an hour she vos busy as could be,  
 Pullin' all dem pee-stingers out of me.  
 By dat dime I dell you, I vos a sight;  
 I nefer in mine life vos shwelled up so tight.  
 Soon some of dose vomen, vot gave me no chance  
 Ven first dose pees crawled up mine bants,



Came in, unt around mine ped now clung,  
 Anxious to see how pad I vos shitting.  
 Den von would tell me dis, unt von dat to try;  
 Anoder would tell me someding else to apply.  
 I nefer knew before, untill I met dese.  
 Dat so many vomen hat been shitting py pees.  
 Von said she knew if I vos packt in vet clay [away.  
 From my knees on down 'twould take all der shwellin'  
 "Madam, you can see from der swell of mine head  
 I ought to be packt from my knees up," I said.  
 She allowed vet clay would, like any good rule,  
 Work either up or down (said my wife, "On a fool").  
 We tried dis remedy after dey went away,  
 Unt dat's der only reason I'm lifin to-day.  
 If we hadn't, I'd been carried on in a gasket.  
 As sure as der vos a hole in de boddom of dat pasket.



#### A RECORD-BREAKING HONEY-QUEEN.

I notice on page 603, where some one speaks of a queen whose bees have filled 100 sections with honey and "are still pegging away." Now, I have a queen that has done better than that, but she is not for sale. Her bees have filled 7 supers of 28 sections each, making 196, every one perfect, besides 45 pounds of extracted honey. Last winter was very severe on the bees in this locality; and this spring, out of 41 colonies I had only 12 that I thought would do more than build up for

winter again, and from these 12 I expected to get only a small quantity of extracted honey; so I put on a super of extracting-frames the 20th of June. The bees I speak of seemed to go right to work, and in a short time I extracted 45 pounds. I then put on 3 supers in place of the frames; and as fast as the bees filled them I raised them, putting others under until they had filled 7; then, fearing the honey-flow was about over, and yet not wishing to close them down too close, I gave them a super of unfinished sections, and they completed them. MRS. J. M. McLEAN.

Ft. Collins, Colo.

[Well, now, Mrs. M., you just keep that queen and rear daughters from her. See that her colony winters well; and next summer, if you do not get calls for daughters from this queen, I shall miss my guess. We are quite glad to give a free advertisement to any one who has a queen that outstrips every thing else in the yard. Oh, yes! do not forget to reserve one of her best daughters for us.—ED.]

#### DRAPER BARNs FOR THE PRODUCTION OF COMB HONEY.

I have been noticing, in the four bee papers which I take, the comments on the large Dadant hives (or Draper barns, as some style them) which you are to give a thorough trial for the next three years. Well, I don't know any thing about what they call (your) "locality," but I *do* know that I have been experimenting with different sizes of hives, and that, as a result of the same, I am transferring *all* combs and bees to the large Quinby frame (I simply cut out combs and set them in large frames, hold the same in place for a few days with one wire and two small sticks, and patch out with foundation, and the bees soon make a nice comb); so you see they are *the* hive for me. Well, any way I know that I do not want any small hive—buckwheaters that swarm, such as Niver's locality calls for. I secured a fine lot of the best and prettiest white-clover honey this season that I ever saw, in tall sections with ferces, and from "barns" too. What I want to know is this: What is the exact outside size and length of top bar of the large frames you are making? are they the Quinby, the same size as those I have been getting from the Dadants?

Midway, Ky., Aug. 21. M. D. OFFUTT.

[The barn frames that we make are 11½ inches deep by 17¾ long. Indeed, it is the same thing as the regular Langstroth, but 2¾ inches deeper.—ED.]

#### BEE-VEILS, AND HOW TO WEAR THEM; SULPHURIC ACID FOR WAX.

The extra GLEANINGS you sent is here. Page 543, subject bee-veils, interests me. I have tried wearing the veil as shown in the picture, but in this locality bees too often climb up inside the veil, while I always want them outside. To tuck the veil inside the shirt collar is the instruction which comes with the veil, I believe, and suits me better. To hold my neck as prim as a deacon from

the wooden-nutmeg State might do; but I sometimes get a move on me, out slips the veil, and my neck looks as if I were a Grover Cleveland Democrat.

When using a veil I wear a broad-brimmed hat to protect my face from the bees that would like to poke fun at me, and to protect my eyes from the sun. Like the young fellow at the dance, I have changed my mind; you need not make the veils longer. It is a short job to fasten a three-inch strip of old muslin or calico to the veil, when it holds position better than an extra-long veil would.

In the second column, same page, I see you recommend sulphuric acid for wax. As the Dadants condemned it several years ago I have never tried it. If the acid works satisfactorily, that paragraph will be worth several years' subscription to GLEANINGS to me.

Grayson, Cal.

W. A. H. GILSTRAP.

[At one time I know the Dadants did object to the use of sulphuric acid for refining wax, taking the ground that it destroyed the natural odor of the wax that is so pleasant. But at that time some of us were using a great deal more acid than was actually necessary to bring wax to a lemon color. We now use a very small quantity; and after refining, the wax is of a beautiful color as well as retaining that delightful honey smell that so many admire. A large foundation-maker in England once wrote us, asking us what we put in our foundation to give it such a delightful odor. We replied that we put in nothing, but that we refined all our wax with a little acid. The natural odor was due to the fact that we had not driven it out.—ED.]

#### AGAINST THE RAGE FOR COLOR IN BEES AND QUEENS.

I am glad some one has called a halt in the color question, and turned attention to the working qualities (p. 603). Does the average man keep bees for the color, or for dollars and cents? I have a queen whose bees have filled 112 sections, and have the third 56 nearly full, this year. She is very dark leather-colored. I have had her two years, and got her second-handed. Her bees are dark (not black) and fairly quiet. Yellow queens in the same yard, that started as strong as she, have made from 10 to 60 lbs. I don't want to sell this queen, but I wanted to tell you that those dark bees have made more honey by 50 lbs. than any yellow ones in the yard, or, I think, in the locality.

C. W. MCCOY.

Mt. Erie, Ill., Aug. 2.

#### EIGHTEEN-FOOT-TO-THE-POUND FOUNDATION.

You sent me a sample of 18-ft. foundation last year, and requested a report on it. As the honey crop was very light I did not get to test much of it until this season. I put it in one side of 4×5 sections, and in the other side Root's and Dadant's extra thin. The bees worked and finished both about alike. Drone comb was built in the lower part of the sections. After cutting and eating we find the least gob, or wax, in the 18-ft. There was

a good deal of basswood bloom, but it yielded no honey; but white clover bloomed freely, and yielded well, but very irregularly, from June 11 to July 12. The flow from heartsease and Spanish needle has just begun, and promises well. My scale colony, Doolittle's golden Italians, net gain, is, for May, 6½ lbs.; June, 82½; July, 61¼; August (to date), 20. It is run for both extracted and comb. I have a hybrid colony that has brought in more cash than the golden Italians run for comb. A cold winter does not prevent a flow from white clover in *this* locality. We had the coldest weather here last February ever recorded—for two weeks, 10 to 28 below zero, and no snow on the ground. M. E. DAVIS.

Bethlehem, Ia., Aug. 29.

[There can be no question but the lightweight foundation will make less so-called gob in comb honey. The only thing we feared was that it would sag in the sections, or be so thin that the bees would gnaw it away. Before we put it out we feel that we require more reports.—ED.]

#### DISCOURAGING FROM BOARDMAN.

Perhaps I might as well add another wail of anguish to reports discouraging. My crop of honey is *very* short. Sweet clover helps me out after the basswood flow, so I shall have some honey to sell, and my bees are in fine condition at this date. My test of the English rape for bee-forage was an entire failure. I made several sowings, but the seed did not grow. I think it was damaged. I hardly think it can compare with sweet clover, which I think is the most valuable honey-plant in the whole world when compared acre for acre.

H. R. BOARDMAN.

East Townsend, O., Aug. 15.

#### THE 5¼ × 4¼ × 1¼ TOO THIN, AND WHY.

As I have read a good deal on plain sections and fences, I too am experimenting along that line. I will send you a section of honey that I have produced under the fence system. This is a plain section, 5¼ × 4¼ × 1¼ and it is not quite to my satisfaction, the comb being too thin. You will find in GLEANINGS, Dec. 15, 1898, page 915, written by J. E. Crane, his query as to such a section. I had this section made when I saw Mr. Crane's idea of such a section. My aim was to get a section of the right proportion to look well; and that I should not have to do any filling endwise in the super, I tacked a rim on the super to accommodate the height of the section. The super holds 28 sections. This was given to a prime swarm, and filled up in short order. The outside sections were as well filled as any of the rest. There were 28 sections, each like every other one. The weight of this section I am sending is 12 ounces, weighed here. It may leak before it reaches you.

I for one am in favor of the fence and its use.

LOUIS MOLL.

Eudora, Kan., Aug. 23.

[It is true that such a section is a little too thin; but it presents a very large surface with



a comparatively small weight of honey. In a showcase or on a counter it looks as if it might be on a par with bottles with sunken sides, and fig-boxes with thick bottoms. I say it *might* be. I don't know.—ED.]

#### ON A WHEEL THROUGH THE BUCKWHEAT COUNTRY; CARNIOLANS.

I used to think that black bees were better than Italians, but have changed my mind after trying them nine years. But they don't cap their honey as white as the blacks do.

I have ridden down through the buckwheat territory of this State, and it is something immense, for there are acres and acres of it, and it yields honey too. I have ridden a wheel down through there two or three times, and had a nice visit with some of the bee-keepers. I saw those Carniolans drop in with those great loads of buckwheat honey. I don't wonder at their liking them. But I would not take them as a gift for my kind of honey, as they swarm too much. I don't want swarms, but honey. I have 185 colonies now in fine shape, the most of them, and I look for a poor year to come, for it will take a year to overcome the drouth. GEO. B. HOWE.

Black River, N. Y., Aug. 18.

[When I went through the buckwheat country I found the Carniolans very popular indeed among buckwheaters; but I heard nothing in regard to their being such excessive swarmers, although they have that reputation. One thing, the Carniolans deposit very little propolis: and if the right strains are obtained they are very gentle, and good workers.—ED.]

#### QUEEN-CELLS FROM A HOLY-LAND COLONY.

On the 14th I cut out 18 queen-cells from a Holy Land colony formed from a one-frame nucleus (bought in Texas April 18, 1899), that had just swarmed. While holding two cells, showing them to my wife, they hatched, one a queen and one a worker, both lively as crickets. Is it common for a worker to hatch from a fairly well-developed queen-cell?

CYRENE E. MORRIS.

Coon Rapids, Ia., Aug. 15.

[Holy-Land bees are the best cell-builders of any bees in the world; yes, they will build cells without any cups and without any coaxing, and the queens are large and vigorous. Indeed, we had one of their queens fly immediately upon emerging from the cell, some two or three feet.—ED.]

#### STARTING BEES INTO SECTIONS WITH EXTRACTING-COMBS; FORMING NUCLEI.

I use Hoffman self-spacing frames below, and shallow extracting-frames in supers, and run mostly for extracted. I like the plain sections first rate.

I tried a plan this season (and it works well) to get bees started in plain sections ( $3\frac{3}{4} \times 5 \times 1\frac{1}{2}$ ). Fix a  $5\frac{3}{4}$ -inch super with rabbits and tins for section-holders. At one side put a shallow frame of drawn foundation or comb; then a fence; next a section-holder and five sections; then a fence and another ex-

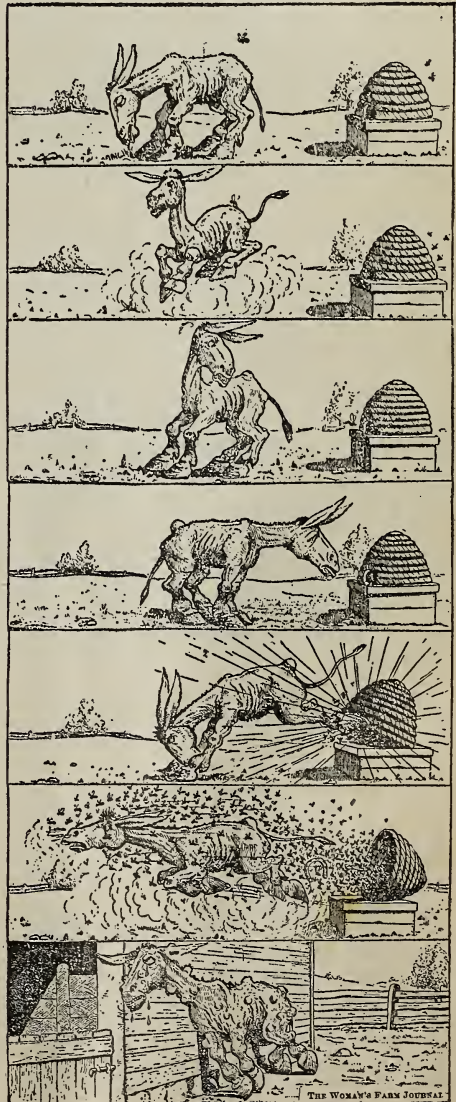
tracting-comb, and so on to fill out the super. When the bees get started in the sections the extracting-combs can be taken away and the super filled with sections, the combs being used as "baits," either in sections or extracting-supers on other hives.

When forming nuclei or new colonies I cause the bees to fill up, then shake them down in front of an empty hive, when they will run in like a new swarm. I have not found a nucleus, thus formed, to lose any appreciable number of its bees by their going back to their old home. I think what few do go back were not thoroughly filled up.

Le Mars, Iowa.

G. A. C. CLARKE.

#### A Stinging Revenge.





EIGHT extra pages this time.

#### HONEY ADVANCING.

IF our readers will look over our Honey Column they will see that prices are advancing. No doubt some of the commission houses have taken our hint and advanced prices, with the result that others will have to follow.

#### KELLOGG'S PURE WHITE-CLOVER HONEY.

WE have assurances from one large grocery company that they will not handle any more of the Kellogg "pure clover honey" purporting to come from Medina, O. They say they would not knowingly sell goods of this character, and that they are, moreover, requesting their salesmen to find out who it is that is putting out this spurious article, and injuring the name of the good old town of Medina.

#### GOVERNMENT AID TO BEE-KEEPERS.

ELSEWHERE in this issue I have referred to the fact that the Division of Entomology, U. S. Department of Agriculture, is proposing to examine pickled or other forms of diseased brood that have developed in various portions of the United States. These specimens of brood "will be turned over to Mr. Benton, who, with a bacteriologist from the Bureau of Animal Industry, will undertake the investigation." The fact that we are to receive aid from the government in this way, even though to a limited extent, will be hailed with delight by bee-keepers all over our land. It is the entering wedge; and it is hoped the time will soon arrive when we shall have an actual apicultural station, for one is greatly needed.

#### R. F. HOLTERMANN.

MOST of our readers are doubtless aware of the fact that Mr. R. F. Holtermann, formerly editor of the *Canadian Bee Journal*, has retired from the active management of that publication. He believes he has been called of God to preach. At a great financial sacrifice to himself he has given up a good position with the Goold, Shapley & Muir Co., withdrawn from the company, retired from the editorial management of the *Canadian Bee Journal*, and resigned his position as lecturer for the Ontario government.

Mr. Holtermann has met with good success so far, and GLEANINGS wishes him Godspeed in every sense of the word.

While the *Canadian Bee Journal* regrets the retirement of Mr. Holtermann, it says it is its determination to turn out even a better publication than heretofore. It does not say who is to be the new editor; but the issue for October makes a very creditable appearance, and, indeed, upholds the standard that has been

maintained by Mr. Holtermann for some time back.

#### GLEANINGS SUBSCRIPTION - LIST BOOMING; THE VALUE OF ILLUSTRATIONS.

OUR subscription-list is on a boom. GLEANINGS has always been an illustrated journal, but it will be, from this time on, more so than ever. We realize the fact that it takes time to read; and where we can give information by pictures we will illustrate regardless of expense. The amount of published matter now in the world is so great that one would have to have a reading-machine if he would get through with even a very small portion of it; and as such a thing is out of the question it becomes necessary in this age of hurly-burly bustle to give people information that they can take in at a mere glance; and that the great magazines of the country appreciate this fact is shown by the large number of illustrations that grace their pages.

#### INTRODUCING IN THE ORDINARY BENTON MAILING-CAGE; A NEW KINK.

I RECENTLY learned that our Mr. Wardell has been very successful in introducing queens in the Benton cage. He withdraws the cork from the candy end, and then tacks a small piece of pasteboard over the hole. The bees will gnaw this board, and the time occupied in getting through it to the candy consumes anywhere from 24 to 36 hours. It then takes 10 or 12 hours more to get through the candy to the queen, assuming that half of the candy has been eaten by the queen and her attendants. This little piece of pasteboard prevents the queen from being released in much less than 48 hours, during which time the bees have had abundant opportunity to become acquainted with her, after which they will receive her kindly.

What led Mr. Wardell to use this piece of pasteboard was that sometimes the candy would be eaten out too soon, with the result that the bees would get at the queen in from 10 to 24 hours, resulting sometimes in her loss.

#### THE PRINCE OF AMERICAN BEE-KEEPERS AND HIS CLOSED-END FRAMES.

IT is with no little pleasure that I am able to present to our readers in this issue, not only a biographical sketch of Capt. Hetherington, but an article from his pen. This prince of American bee-keepers does things on such a magnificently large scale that the operations of the rest of us pale into insignificance. It is one thing for a bee-keeper to manage 100 colonies successfully, but it is quite another thing to make 1000 bring in to their owner clean cash. What shall we say, then, of a man who can manage 3000 colonies so successfully for so many years? Such a record is phenomenal. To my way of thinking, the feat of managing 3000 colonies requires more skill and forethought than the task of managing a whole system of railways.

A very large proportion of the captain's colonies are on closed-end Quinby frames—



the kind that many of the bee-keepers of the West used to think were first-class bee-smashers; but I have personally seen some of those York State bee-keepers handle colonies on these Hetherington-Quinby frames, and I know that they get through with their manipulation practically without bee-killing, and just as rapidly as we with our kind.

#### ADULTERATED HONEY HAILING FROM MEDINA.

At the last convention, some one, I do not know who, brought in some bogus honey, labeled "Kellogg's Pure White-clover Honey." There was nothing strange about this; but when the last part of the label was read, "Medina, O.," a good deal of fun was poked at the members of the Root Co. who were present. And then Dr. Mason (that bold bad man) and a few others, were naughty enough to try to incriminate us. Yes, the doctor even asked me what I knew about it.

Joking aside, it is evident that some unprincipled concern is trying to "steal another's thunder." Medina, O., has come to be known as quite a center of bee-keeping interest, and the rascals who put out this "stuff" have borrowed its good name, and at the expense of the Root Co.

The honey in question was sampled by various members, and pronounced adulterated without doubt. It was analyzed by Mr. Sells, our chemist, and he pronounced it 75 per cent glucose, a certificate of which analysis I now hold in my hand.

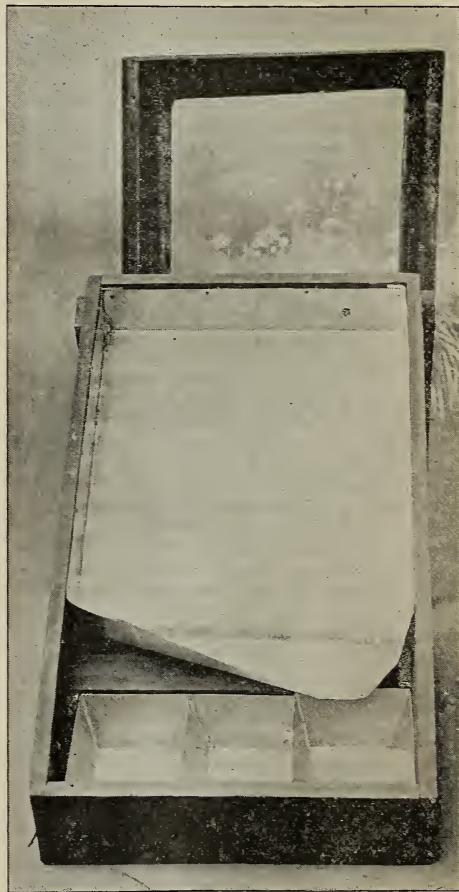
You may be sure The A. I. Root Co. does not propose to let the matter drop where it is; and we shall be obliged if our subscribers in the West, where this bogus stuff is sold (and I understand it is sold all over the West) will give us a list of the stores where it is kept for sale, and the name of the firm that is putting it out. We will see if we can not get together enough material for a red-hot damage suit; for, no joking, we feel that our name has been damaged by such vile stuff going the rounds of the country. It is to the interest of every bee-keeper that mixers of this article, "Kellogg's Pure White-clover Honey," be brought to time; and we therefore call upon our readers for such facts as they can give us.

It is hardly necessary for me to state that there is no adulteration of honey in Medina, and never has been. We have only 2500 inhabitants; and if there is any kind of business like this going on we should know it in a very short time.

#### THE RAUCHFUSS SOLAR WAX-EXTRACTOR.

MR. FRANK RAUCHFUSS, of Elyria, Col., manager of the bee-hive department of the L. A. Watkins Merchandise Co., of Denver, Col., has made an improvement in wax-extractors. The Rauchfuss machine is a good deal like the Doolittle, with the exception that the wax is diverted to the right side into one of the three pans shown. This pan catches all the refuse and sediment, the same settling to the bottom. The pure free wax rises to the top, and overflows into the other two pans.

The result is, when the wax is all melted, the wax in two of the pans, at least, is in marketable shape, while that in the first pan mentioned, after scraping off the sediment from the bottom of the cake, may be rendered again or sent to market. The L. A. Watkins Co. has



sold these wax-extractors in preference to the Doolittle and other styles; and from all I can learn they are giving good satisfaction, because the wax, as soon as it leaves the extractor, is all ready for market without further melting up.

#### CAPTAIN J. E. HETHERINGTON, THE MOST EXTENSIVE BEE-KEEPER IN THE WORLD.

AFTER more or less investigation I have come to the conclusion that Capt. J. E. Hetherington is by far the most extensive bee-keeper in the world. He has been managing, and has operated successfully, too, in the neighborhood of 3000 colonies, probably for the last ten or fifteen years, and I do not know how much longer. There are, perhaps, a dozen bee-keepers in the United States who own and operate anywhere from 1000 to 1500 colonies;

but I think there is not one who reaches the 2000 mark, and certainly none that reaches the 3000, except that veteran who, in the civil war, rendered his country such distinguished service.

His record as a soldier is fully set forth in the A B C of Bee Culture, in the Biographical Department, and I need not dwell here particularly upon that, any more than to state that he was captain of a company of sharpshooters—a position that means a great deal more than to be captain of an ordinary company of infantry. Three times he was wounded, and finally was discharged on account of the disability from his wounds. At the close of the Gettysburg campaign his name was sent up to the War Department as one who had rendered gallant service for his country.

But it is of his record as a bee-keeper that I wish to speak more particularly. It may not be generally known, but he was the originator of the no-drip shipping-case that is now used almost universally throughout all civilized beedom. When we first introduced this case five years ago, it was brought to our attention by the commission houses, who urged upon us the importance of making our cases on the no-drip plan. Where it originated we did not then know; but after we gave bee-keepers a chance to get them they jumped almost into instantaneous popularity. I learned later that it was Capt. Hetherington who first began using them; and some commission houses, seeing the cases that the captain used, no doubt began to urge their customers to adopt them here and there, but before any bee-keeping-supply establishment had come to know very much of their merits.

Almost in the same way the tall section came into prominence. Where it came from, no one really seemed to know; but Mr. Danzenbaker, when he called at Medina, said he saw it first at Capt. Hetherington's. That the captain was the first to introduce it, I think there can be no question, for all the evidence points that way. Mr. Danzenbaker was so well pleased with the section and its selling qualities on the market that he immediately adopted it, and threw aside the  $4\frac{1}{2}$  square section which he had previously used in what he then called his Dual hive.

Indeed, after Mr. D. visited the captain he came back with a number of new ideas, and among them was closed-end frames; and in this connection I would say that Mr. Hetherington was the first man to make a really practical thing of closed-end frames. True it is that Mr. Quinby invented them, and came very near adding to them their finishing touches. But as Mr. Quinby originally used them in his particular form of hive, the frames were by no means as easily handled as in the particular form used by Capt. Hetherington; and from this originated the Hetherington-Quinby frame and hive that are used so much in certain sections of New York.

In these days, when the matter of transparency in foundation is so highly prized, it may be well to remember that Mr. Hetherington was probably the first to get out what was really the first transparent foundation. Those

of us who bought the Vandeuken flat-bottom article years ago will remember how beautiful and transparent it was, and that nothing has been made of late years that was any clearer or more beautiful. Whether it had the same pliable qualities that are found in the Weed transparent foundation, I can not say.

It was Capt. Hetherington also, I believe, who first conceived the idea of incorporating fine wires into the foundation itself. A patent was granted, and for years the Vandeuken made what was called their wired flat-bottom foundation under royalty from Mr. Hetherington.

In the matter of fishbone in comb honey, it was Capt. Hetherington who first saw the importance of reducing the amount of wax in the base and putting as much as possible in the wall. We have talked a good deal about this of late, but really Mr. Hetherington was ahead of all of us in this.

Super springs, a device for pressing sections together while on the hive, and which have recently come into prominence, were the invention of Capt. J. E. Hetherington—at least he used them away back in 1872, and has used them continuously till this time. This one fact alone speaks volumes for their practicability; and it is strange that we of these latter days did not discover their value sooner. Mr. Danzenbaker first saw them used in California, in the apiary of Mr. Mendleson; but the springs he used were a little different from those Mr. Danzenbaker had placed in his comb-honey supers. And now it appears that E. P. Churchill was another one who had prior use of them; but Capt. Hetherington comes ahead of them all in point of time.

Notwithstanding the fact that the captain probably produces the largest crops of honey of any bee keeper in the world, there is probably no other bee-keeper on the face of the earth who puts out a higher-grade article of comb honey than he. There are certain buyers who will take his honey every year at 1 or 2 cts. a pound above the market; and the reason of this is plain. His comb honey is always in tall boxes, and put up scrupulously neat and clean in no-drip shipping-cases such as he himself originated.

Although he is now quite well advanced in years, I think I never met one who is more enthusiastic about bees and bee-keeping than he. A charming conversationalist, he fairly bubbles over with ideas. When he is present at a convention I always regard it as a rare treat to meet him.

I have felt for some time that this prince of bee-keepers was not receiving the recognition that he really deserves, and that some of the inventions we now so highly prize, and the product of his genius, should now be duly credited.

With all his other qualities the captain is an exceedingly modest man—rather shrinking from notoriety, and yet perfectly willing to contribute and help to elevate the pursuit; a busy man, he has no time to write letters; for his extensive business, unless he kept a stenographer, would hardly permit him to do much in that line.





Your adversary, the devil, as a roaring lion, walketh about, seeking whom he may devour.—I. PETER 5:8.

Satan himself is transformed into an angel of light. II. COR. 11:14.

*Continued from Oct. 1st issue.*

In our issue for June 1 I spoke of the way in which Satan seems of late to get hold of people when they are sorely tempted—perhaps when they are worn out with fatigue and exhaustion. He seems to whisper to them that life is a miserable failure anyhow; that the great Father above is not a good father; and I am led to believe that people have at times yielded to his suggestions, and committed suicide when they had hardly thought of the matter before. He takes us unawares.

In the latter one of our two texts we are told he sometimes comes as an angel of light. I wish to give you something that illustrates this text especially. From away off in a distant land a letter comes to me that was prompted by these two articles I have alluded to, concerning demoniacal possession. A young man of excellent parentage and of excellent habits married a beautiful and talented girl, but she was afflicted with an incurable disease. If I am correct they were both professing Christians, and talked over the matter of her approaching death with coolness and calmness. During their married life both of them were somewhat acquainted with spirit-writing on slates; and, if I am correct, the wife promised the husband to communicate with him as speedily after death as possible, if, indeed, it were possible at all. Of course, this is no new thing. Many such contracts have been made, and perhaps quite a few good people think departed friends have sent messages to them in accordance with this promise. Within a few hours after the death of the dear wife he received messages purporting to come from her; and he further on discovered that no medium was needed. His own hand moved in response to some power unknown to himself, and gave him messages from the dear departed wife. We could scarcely call our friend insane over the loss of his wife, for while this thing was going on he had charge of a large and important business, and did his work well and faithfully. Unfortunately, perhaps, he roomed alone in a building by itself. In a little while he spent a great part of his time in communicating with his wife in the spirit world. I believe he made no confidant. Had he talked with somebody else about it, and told what he was doing—had some relatives been near him, he might have been delivered from the power of the evil one. Permit me to digress a little right here.

It was shortly before getting this letter that I read the book I have mentioned in our last issue. This book explains many queer phenomena of the mind by stating that every person has two kinds of consciousness (or un-

consciousness, whichever it is). Some of our friends may remember that I have before this, in these Home Papers, ventured the belief that there are two sets of reasoning powers in every person. One takes care of the physical body as a sort of instinct. This "other fellow" is stupid and unreasoning; but the author of this book says that this *subjective* self has a memory away beyond the objective. That is why in dreams we recall things that we never should have thought of in our waking moments. Every act in life—almost every thought in life—is pigeon-holed and laid away by this other fellow. I would suggest that he runs the imagination. When a man is crazy, or is a somnambulist, this other fellow runs the whole thing. He remembers every thing, receives suggestions from everybody and everywhere; sometimes takes the reins, and makes people do things that a person in a normal condition never *could* do. When the objective self can be got rid of, this suggestive fellow produces the phenomena of hypnotism and clairvoyance—yes, and spiritism too; and yet the person may be honestly innocent of the whole matter. When our friend shut himself up during his leisure hours, and listened to the messages which he supposed were from his wife in the other world, he was simply letting this other fellow bring up incidents from memory in regard to the dear wife when she was with him, and thus make up talks that sounded exactly like her—in fact *were* her—by this wonderful faculty of memory, managed by this other intelligence I have been speaking of, so that it was really herself, though she was dead and gone; and it is not necessary to bring her spirit back to earth to explain the strange phenomenon.

With this state of affairs Satan very soon stepped in; and, dear friends, if you follow hypnotism, clairvoyance, mesmerism, spiritism, and slate-writing *anywhere* in any part of the world you will find Satan gets in his work sooner or later. Look about you and tell me if this is not true. In time our friend became so proficient in talking with his wife that he dispensed with the slate entirely. They talked back and forth by word of mouth. He probably talked out loud—I do not know. Through his mind he heard his wife answer.

A time came one bitterly cold night when Satan's cloven hoof betrayed his presence. The spirit was so unlike that of his wife that he protested, and she (or Satan rather) admitted that it was some other individuality, and said that his wife was in torment, and he was the cause of it. Our friend, who was a Christian man, prayed for help, and help and deliverance came. He slept in peace, and supposed the delusion was over. But the Devil had not got through with him. The next day our friend longed for the presence of his wife again, and tried to see if she would not come back and explain. But this time *still another* spirit answered him, and said that his wife was suffering from something like insanity because she persisted in clinging to him and to *earthly* things. Our text tells us that Satan sometimes comes as an angel of light. In this case he put on the appearance of an angel of

light (personating the good and gentle wife) for perhaps many weeks or months; but when our friend began to pray to Christ Jesus for deliverance, Satan made a retreat as he always does. Now, this friend should have let the thing entirely alone when he once saw the devilish side of it. He did not, do so, and, like Adam (and therefore Eve and all their descendants since that time), he was sorely punished. The *new* personality assumed to be a friend of his, as I have said—a mutual friend between him and his wife. He seemed to be intelligent and high-toned; and, by the way, the Devil must have gotten a very tolerable education somewhere, coming down along the ages. One may have *every intellectual attainment*, and still be possessed of the Devil. Our victim soon learned to converse with his new spirit-friend at any time, even during his work. They carried on mental conversation. Perhaps many of my readers will say right here, "Why, the man was crazy, or was going crazy." Well, very likely this is true; and if the Devil is not at the bottom of all insanity he has at least a good deal to do with much of it.

I can imagine here that the arch fiend concluded that he had wasted time enough on our poor, honest, deluded brother, and that he had better bring things to a crisis, and either get him for his own or give him up. One very cold night in winter this new friend reproached him for having got his wife into her great trouble, and was yet unwilling to do any thing to get her out. Of course, he resented this, and said he would do any thing to help her. The question came, "How much are you willing to endure for her sake?" Like a true husband, he answered he would give his *life* if need be; that for her sake he would "go through fire and water," as the expression goes. The spirit took it up at once and said, "All right. Hold your foot over the glowing coals in that stove so many minutes, and your wife will be delivered from all her torture and suffering."

Now, our friend should have rejected this at once, and have called on Christ Jesus for deliverance. But his wife joined in. He actually heard her voice, beseeching him in agony to *endure* the pain for just a *few minutes*, just to rescue her from the fires of hell for *eternity*. The Devil here betrays his ignorance, or, better still, *willful* ignorance, of the real statements to be found in the Scriptures. We might expect a man in the possession of his senses to see the absurdity of this whole thing; but his wife's groans and tears and screams, if I have it correct, pushed him on. This transaction happened in the middle of the night. Finally, in response to the importunities of his wife and the friend who stood by—that is, the spiritual friend—he got up, put his naked foot in the stove, and held it there until he became crippled for life. I should hardly dare to put in print his description of the torture he felt during those moments. Then the spirit said, "You have gone through fire; now go out and stand in the snow so many minutes," for it was toward a zero temperature. Of course, the next

step on the program was suicide. That is where Satan winds up, and never winds up until he gets his victim, soul and body, unless some power greater than his own intervenes. This friend had been delivered by Christ Jesus once before. Now something whispered that he was truly and unerringly treading the road to hell. With his poor crippled and charred foot he stumped back into the house, fell down on the floor, and begged God's forgiveness. He lighted a lamp, got his Bible, and renounced at once and for ever Satan and all his swindling gang. You see Satan had put into his mind a distorted idea of sacrifice; that is, by giving his life, and by being voluntarily *burned at the stake*, as it were, he was going to purchase deliverance for the one he loved—one whom he loved, I fear, more than he loved Christ Jesus. By the way, at the time the demon suggested suicide he undertook to cast ridicule on Christ; and perhaps it was through this blunder (for Satan *does* blunder, thank God, at least sometimes) that he had his deliverance. He was satisfied then that the spirit that was leading him was really at enmity with the Savior of the world. But after our friend came to his senses, enough at least to go at once to a physician's and take treatment at a hospital, the Devil made desperate and terrible efforts to get him to commit suicide. He told him he would be the laughingstock of the world; that everybody who saw him stumbling about or walking on crutches would find out all about it; and the sooner he put an end to his existence the better; in fact, it was the *only* thing to do. Then he realized, through the light of the Bible and that of the dear Savior (now his only friend) that he *was* on the verge of insanity. My friend, you have during your life, perhaps, had similar struggles with evil; but you know nothing of the conflict this man went through with to hold his reason. If he let go, Satan would be sure to get him out of the world. God heard his prayer, and warded off the insanity that had been so well started. Through Christ Jesus he braved it all, went and laid the whole story before the nearest minister of the gospel, and solicited his help, for he had to have help in a time like that. His wife's voice also was ringing in his ears, remonstrating and protesting. If ever a man lived who found it next to impossible to say, "Get thee behind me, Satan," it was this poor friend of ours. He was tempted to throw himself before railway trains. All the methods of committing suicide that had been heard of or read of pushed themselves into his mind. But he held fast to special Bible promises. Perhaps he realized, as few of us do, something like the following: "When thou passest through the rivers they shall not overflow thee."

It was finally decided that amputation was not necessary. The Devil kept nagging him, advising him not to go near a *Christian* institution. Our friend actually begged the doctors to give him morphine to see if it would not drown his agony. Thank God, the doctors were sensible. The morphine would have given him over to Satan or to insanity, and would have proved to be Satan under another



disguise. The Christian doctors gave him Christian treatment and Christian advice. He did not suffer amputation, and perhaps many would not know that he was a cripple. One text that gave him great comfort at this time was, "The Lord knoweth how to deliver the godly out of temptation." But in answer to this, Satan would keep putting in "But you are not godly; you are not one of his." If I am correct, these events happened some years ago; but the writer says he thinks he could hear these voices at any time, even *now*, if he were to call them back; and this illustrates once more how evil habits or bad associations *cling* to a man all his life. I wrote, imploring him, for God's sake, not to touch, taste, or handle this thing any more.

Now in regard to the latter of these two texts. Spiritism, and, in fact, all other isms (including the new ones), almost always start out by claiming they are in full accord with the Bible. Of course, they will tell you that the Bible has always been misunderstood, and that their doctrine is the first thing that has ever come up that really took the Scriptures just as they mean. Then they quote extracts from the Bible, and make things appear exceedingly plain, honest, and right. It is indeed astonishing to see with what subtle ingenuity Satan puts on an appearance of being a good man. Why, he actually *loves* righteousness, and *hates* iniquity from the very bottom of his heart. No wonder that young people (and sometimes those who are old enough to know better, also) are drawn into his snares. But sooner or later you will run on to something very much as our friend in his touching story did. In Pilgrim's Progress you will remember Christian was persuaded there was a better path—not so many quagmires and difficulties to encounter. He found the new path very plain and very plausible for a time. Finally a great rock stood towering above his head; and when this rock began to totter with hidden fires and rumblings he was afraid. He told his deliverer he feared the great rock would tumble down upon his head; and then he retraced his steps and got back into the straight and narrow path. So it is with these new things. There may be bad work with our established churches. Even the dear Savior himself had one Judas in his little company; but when somebody tries to explain to you that there is a better way than our orthodox churches, and a better rendering of the Bible than our regular ministers of the gospel understand, then you may be sure it is Satan who has got hold of you, and that he will, sooner or later, slip off his garment of light, and betray the cloven hoof. How shall we know when we are right? do you ask? Consult your Bible, and kneel to God in prayer, just as our poor crippled friend did; and remember that the gospel of Christ Jesus never enjoined anybody to keep his religion all to himself. Not only are we to hold fast to our Bibles and to daily prayer, but we are commanded by the Scriptures to be on intimate and friendly terms with our neighbors and with our fellow-men. No man is safe who does not confide to and be advised, at least to

a certain extent, by his friends and neighbors. I am satisfied, in fact, that it is really dangerous for anybody to have no intercourse or counsel with his fellow-men. In troubles like these, be sure to make some minister of the gospel, say the pastor of the nearest church, your friend and confidant. Your family physician, if he be a godly man, would come next; and I do not know but I would make him a friend and confidant—that is, to a certain extent—even if he did not happen to be all we should like in the way of godliness and righteousness. May God help *you*, dear friend, to beware of that great adversary to all humanity, who really does go about as a roaring lion, seeking whom he may devour.

Before concluding this warning, permit me to mention that, on one of my travels, I became intimately acquainted with a man who, I was told, was a great drinker. Just before leaving him I broached the subject. He admitted it, and gave as an excuse that, years before, he became entangled with the spirits in slate-writing. This I knew to be true, for I knew of him. He said that nothing but drink would drive them away, and that was why he drank. In this case, if the remedy was not *worse* than the disease, the disease must truly have been a bad one. Should these words be the means of holding out a kindly caution to any reader, young or old, to beware of this thing that has entangled and broken down thousands of some of our best intellects, then I shall not have written in vain.

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#### ZION TABERNACLE AND LEAVES OF HEALING.

Dr. Dowie seems to be getting beside himself. We notice by the Chicago *Record* that he has recently been attacking Moody, and calling him names after his fashion, and finally wound up with a tirade of abuse against his own people in Zion Tabernacle because they did not hand over their tithes to Dowie himself in a way he thinks they ought to do. It almost seems as if Satan must be prompting him when he hurls epithets at everybody, right and left, as he is hurling just now. The only complaint that he has against Moody, so far as I can gather, is that Moody has been putting out a friendly hand toward the Roman Catholic Church. And, by the way, some very good Christian people have complained because the Anti-saloon League is joining hands with the Roman Church in temperance work. Perhaps these good people had better remember what the Master said to his disciples when one not a member of their own company was casting out devils. Jesus said, "Forbid him not; for there is no man which shall do a miracle in my name, that can lightly speak evil of me. For he that is not against us is on our part."

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I have just been reading your "round-up" of the "heaven science" and electric frauds. You can not hit them too hard. The *Central Christian Advocate* still carries the Oxydonor and Electropoise advertisements. C. F. NEEDHAM.

Leavenworth, Kan., April 23.



### CAULIFLOWER AS A HONEY-PLANT.

#### A Glimpse of the Only Spot in the United States where Cauliflower Seed is Raised by Field Culture.

This photograph shows part of a six-acre field in full bloom, with the men just tying them up to stakes, and one man watering with 3-inch cotton hose, with your humble servant watching the Italians just swarming over the bloom. It's one of the best honey-plants that ever grew out of the earth. I have grown figwort and other honey-plants recommended by A. I. Root several years ago, but none could compare with the cauliflower-blossoms to produce honey. I have covered up a plant in the afternoon, and found the next morning the little cups just running over with thin honey, and the large lower leaves completely wet with the nectar. The field has the appearance of half a dozen swarms in the air at once, or a good smart start at robbing. The honey is a light amber in color, and of a most delicious flavor. So you see I raise two crops the same season—a crop of No. 1 honey and a crop of cauliflower seed.

Fidalgo, Wash.

H. A. MARCH.

In addition to what friend March has said, permit me to say that the whole plantation, and especially the glimpse of our good friend March himself, gives me a thrill as I think of my pleasant visit to Puget Sound a few years ago. I suppose our readers will be astonished (with myself) to know that cauliflower grows up tall, and sends out branches like a tree, as seen in the engraving. At the right of the picture, in the background, you get a glimpse of the home-made reservoir constructed by friend March himself. This reservoir is kept full by a beautiful spring. I have told the story once before, but I think it will bear telling again.

Friend March had just begun to make some money at market-gardening, quite a good many years ago, and his neighbor looked on and became jealous of friend M.'s success. If I am correct, the neighbor lives over in that house by the woods, off to the left in the picture. Well, the spring that furnished the water for irrigating the cauliflower-fields was on this neighbor's land, and he turned it off another way, cutting off the water supply. I suppose that, by going to law, friend March could have claimed the water that originally ran over on his premises. But he is a peaceable man, and thought he would rather waste a little money in digging into the side-hill along *his* side of the division fence than to quarrel with a neighbor. So he set his boys at work digging a ditch along the fence in the background, that runs uphill into the woods. They found a little water, but not enough for his needs. Then he told them to keep on digging, and go down pretty deep. They worked at it by odd spells until they got down into the hill perhaps six or eight feet deep, and may be more. I know it is an awfully deep ditch. One day our old friend came along by his reservoir, and saw a big stream of water coming down the ditch. He supposed the boys had dammed it up to keep it out of the way, and

had just let it loose. He was just thinking to himself, "Now, I would give a clean thousand dollars to have such a stream of water as that right along all through the summer." But he dismissed the thought, thinking it among the impossibilities, when he was startled by hearing the boys yell; and, looking up, he saw them swinging their hats. It was no letting-off of the dam, but a permanent stream; and the funny thing about it was that, in tapping this big stream, they cut off the neighbor's supply entirely, and left him, as it were, "high and dry." Well, I suspect there might have been a chance for a lawsuit on the other side of the house; but friend March very graciously divided the stream and gave the neighbor all he wanted of it; and that stream of water seems to be running even now.

The cotton hose friend March alludes to, and which is now in use more or less all over the world, was first planned years ago by our veteran grower of cabbage and cauliflower seed.

I am very glad indeed we have been enabled to get such a beautiful picture of this unique seed-growing farm. If I am correct, there is not another spot in America, and perhaps not in the world, with a long even-tempered season, supplying just what is wanted for the production of the very best strains of cauliflower and cabbage seed. If it were not such an awful distance up to Puget Sound I do not know but I should have started, on receipt of the above picture, to see the golden Italians humming over the blossoms of the Snowball cauliflower seed. By the way, cauliflower needs lots of water almost every day in the year. The peculiar damp climate of Puget Sound furnishes it naturally in the winter time; but during the summer they often have quite severe drouths, and nothing but such a spring of pure soft water would carry the seed-growing industry clear through the season without any hindrance from drouth.

Now, friends, the picture shows you what H. A. March has accomplished by years of toil away out in the woods in that new country. Now, do you *know* there is not a spring to be found somewhere in the hillside near you? and if there is, have you got the energy and go-ahead to develop such a plant and such a reputation too as H. A. March's strain of seeds has secured?

Yes, there is another little story I wish to tell. Just notice how well our veteran friend holds his age. He is conducting a profitable business, even if he is toward 70 or may be beyond it. Well, when he was but a little over 50 he thought he was broken down and played out. He was so nervous he could hardly write his own name. Do you ask what made him young again? Why, he gave up his tobacco for a Simplicity smoker, and in a few weeks' time his hand was as steady as if it were made of cast iron; and with the money he had previously used to buy tobacco he purchased about as pretty a library of good and useful books as you are likely to find in any home in our land. What sane man would think of dying of old age before he is 60, when he might just as well be vigorous, bright, and hardy for 20 years or more longer?







## HOME-MADE WINDMILLS.

The above is the title of a bulletin issued by the Agricultural Experiment Station of Nebraska; or, rather, the title is, "The Home-made windmills of Nebraska." It is a book of 78 pages, including a great many beautiful illustrations. Although I am greatly interested in almost all publications from our experiment stations all over the United States, I do not think I ever saw any thing that took hold of me as does this one. Why, the book should be worth thousands of dollars to the farmers in every State in the Union. I can well conceive how a single copy may be worth hundreds of dollars in just one neighborhood by being passed around from farmer to farmer. Perhaps I am over-enthusiastic; but let me tell you what I know about this business. When I was a boy of fourteen or fifteen I made a windmill that did the churning, and did it nicely. It would have pumped water if we had had a pump. In my travels I have seen a great number of these cheap mills doing excellent work. In South Dakota there are hundreds of them. The book gives pictures of mills in actual operation, and tells where they are located, and also what it cost to make them. And, by the way, there is an important point right here. In talking with young farmers, especially those who are just making a start in fruit-growing and gardening, how often we hear the lament, "Yes, I know it would save me lots of time and lots of muscle if I had a cheap windmill to do our pumping; but there are so many other wants I really can not afford it. There is a mortgage on my farm; and although there are many different ways in which we could be greatly helped by the expenditure of a little money, I do not dare to go into it till the mortgage is paid off." The above I hear again and again; and I think the young wife and husband are right in keeping down expenses. But, dear friends, this bulletin tells how you can make a windmill that will do a pile of work for you, without costing hardly a cent of cash outlay. There is hardly a farmer but has time stormy days, or during winter, to make a windmill; and with regard to the material, let me quote a part of one chapter from the book:

## THE JUMBO WINDMILL.

The Jumbo mill, or Go-devil, as some call it, is very much like an old-fashioned overshot waterwheel. It is simply a sort of overshot windwheel.

We have taken the liberty of putting it in the lowest group of mills, where it probably belongs, although in talking with their owners it is plain that they defend these mills, and would put them in a higher class, all of which speaks well for this simple and useful mill. However, as a matter of fact they are probably the least efficient type.

This much must be said, that they lend themselves readily to construction, being very simple in design. Furthermore, almost any kind of material may enter into their make-up, so they are economical. We have seen old lumber, lath, shingles, split rails, old packing-boxes, barrel-staves, coffee-sacks, and even the tin from old tin roofs, pressed into service in the construction of these mills. We even found the tin can doing service in this capacity, for one farmer living near a small town found hundreds of old tomato-cans in the dump near his place. Raking these into a heap, and covering the same with straw, which was burned so as to unsolder the tops, bottoms, and sides of the cans, this farmer found himself with several hundred

pieces of tin which he nailed to the loose sides of his Jumbo box. This was counted an interesting case; and others might be cited, but this is quite enough to verify the statement that these mills can be constructed largely of old or even of waste material such as is common to almost any farm. If the Jumbo can not be built cheaply, and by one's own labor, it were better not built at all. This is not literally true, for any mill is better than no mill, but some other form of mill could be chosen to advantage.

The Jumbo mill can be used advantageously, as is illustrated by its practical operation all over the State, to pump water for the house, or for the stock, or for the irrigation of small patches of orchard or garden. For the irrigation of large tracts it may not amount to much; but touching this point it may be well to remember that if one small Jumbo can irrigate a small patch, several large Jumbos could irrigate a much larger one.

We have seen the Jumbos varying in size and strength from those at work pumping water for the irrigation of the garden of a town lot up to those which were irrigating ten acres of orchard. If this much is already possible, more is to be expected. Several Jumbos, if well built, would do not a little service in field irrigation, especially if the water were first pumped into a storage reservoir, and thence into the furrows. And its usefulness might be still further enhanced by using it steadily during the fall and winter in order to get the ground well soaked.

I suppose this windmill bulletin is sent free of charge to every applicant in Nebraska; but I can not learn anywhere from the bulletin how people living in other States can get it. You had better send a postal card to the U. S. Agricultural Station, Lincoln, Neb., and they will tell you how to get it.

The book is doubly interesting to me in that it offers nothing for sale. The author is Erwin H. Barbour. He has traveled miles and miles just to see these home-made windmills, and a lot of money has been expended in getting up the book. I do think the Department at Washington should have this book reprinted, and spread gratuitously all over Uncle Sam's domain. It is a grand object-lesson for the boys. It tells not only what can be done in the way of utilizing wind power, but it also gives wise instruction as to what can *not* be done. I wish to express my thanks to Mr. Barbour for the grand work he has done so well, and I wish to take off my hat and make my best bow to the whole State of Nebraska.

Perhaps I might add that I knew our Nebraska friends were at work on this bulletin; in fact, it has been my privilege to talk the matter over and urge upon them the importance of it. Where a man's time is all occupied, and he is getting good or fair wages, very likely his best way is to buy a windmill made at a factory. But farmers and others who have spare time during stormy weather, and a limited amount of cash, should by all means have some sort of windmill to pump water and do lots of work around the house.

## THE SEVERE FROST ON THE MORNING OF OCT. 1, ETC.

I said in our last issue that we were getting 1½ cents per lb. for Concord grapes. Before half of them were sold, however, the price went up to 2 and then to 2½ cents, and we got the latter figure for a large part of them. After the severe and killing frost on the morning of Oct. 1, the price went up still more; and, by the way, I do not know that I remember a season before when the first frost, hard enough



to kill tomato-vines, injured grapes. We have been in the habit of saying that grapes are never really sweet until they have been through one pretty good frost. But this time they got "sweetened" with a "vengeance." They were frozen as hard as bullets, and some of them actually burst open. Of course, there was not any more growth of potatoes after that severe frost; but we grew a second crop of the Triumph, and the vines all died down before the frost "happened." This year the frost came rather earlier than usual.

Our buckwheat, sown about the first of August, is, so far as seed is concerned, mostly a failure. There was considerable ripe seed when the frost took it, but I judge not enough to pay for harvesting. There is enough, however, so the hens are having quite a picnic in picking the grain from the drooping heads. I should have had a magnificent yield if the frost had held off ten days longer. But as it is, it will make a splendid mulch for the crimson clover that just looks handsome as it peeps through the blackened stalks of buckwheat; and besides the crimson clover, we put in a sprinkling of turnip seed. The turnips look, too, as though they were very well pleased to have the buckwheat and pusley get out of the way with such alacrity. All three crops were sown on our rich creek-bottom potato-ground, and somehow pusley has got in of late; and around the edges of the field, or wherever there is a place, the pusley was making a most enormous growth, and I really thought of having one of the men clean it out, because it looked so bad, only about a week ago. But the pusley is not anywhere now; so you see a frost helps to get rid of a good many pernicious weeds. Well, I imagine the pusley and buckwheat are going to be just the sort of mulch the crimson clover needs to have it do its very best. There is plenty of moisture now, and I do think crimson clover is about the handsomest shade of green I ever saw anywhere. The buckwheat was growing so rank it was rather crowding the clover, and I began to doubt somewhat the expediency of having two strong-growing crops on the same ground; but now, you see, I am all right. If we had poultry enough to gather all the grain, there would not be any loss; but I suppose the ripened grain will be worth something as a fertilizer. I once plowed under a crop of mammoth clover to sow to buckwheat. The clover was full of seed, and a neighbor told me the clover seed would be worth more than any crop of buckwheat I could grow; and I have always thought that that clover seed had something to do with the enormous crop of buckwheat that I took off from the ground in a very short space of time.

We are just now getting in wheat where we dug our potatoes. The first week in October is a little late, but with our rich ground the wheat will be strong enough; and next spring I am going to sow mammoth peavine clover on the wheat, and get the biggest growth I possibly can, and then plow every bit of it under for potatoes. I saw it stated somewhere, that where anybody wanted clover to plow under, and for no other purpose, and did not expect

to cut or feed a leaf of it, peavine clover is the clover above all others.

#### POTATOES UNDER STRAW.

The experiment that I had hoped so much for was a good deal injured in result by the severe drouth, as I have mentioned; but it has given me some pointers. The potatoes are of excellent quality, nice shape where the straw was in sufficient quantity, and almost entirely free from scab and blight. July 12 the boys found two Rural New-Yorker potatoes that had been overlooked. They were wilted, sprouted, and not at all in good order; but we cut them to one eye, and planted them near the strawstack, under the damp rotten straw. I noticed once or twice they had sent up some very thrifty shoots, and were growing quite well. When digging the potatoes out of the straw the boys were surprised on finding a dozen or more of the handsomest Rural New-Yorker potatoes—in fact, the handsomest potatoes I ever saw in my life of *any* kind. They were as clean and white as water would wash them, and as round and smooth as an apple. For some time back I have been wondering what a potato would be like if it could expand in all directions without any pressure from the earth surrounding it. Well, here we had it—the natural shape of the potato when grown without hindrance from any environment. These potatoes grew in about 72 days (the frost came Oct. 1st), and their growth was almost all made right during the drouth. Now, I am going to try that over again next year. The straw that we have used this year will answer all right another season, I am sure, at least so far as it goes; but I think I shall cultivate the ground and work it up nice and mellow under the potatoes so the roots can get down into the earth if they want to. Then I am going to have straw enough to keep them damp and cool all through the season; and, finally, I am *not* going to have the chickens working in it next year as they did last. The greater part of the potatoes were right near their quarters; and one day they would hoist the straw one way and the next day the next. By the way, what an *awful* amount of muscular work an enterprising hen will do in one day, any way, especially when she finds some rotten straw or chaff to dig or scratch in! All around the poultry-house they pulled the straw off from the potatoes so persistently they were not only greened but *browned* by the hot sun. This spoils them for eating, but it will not hurt them for planting. The Rural—or better still, perhaps, Carman No. 3—is an especially nice potato, I think, to put under straw. The tendency is to grow handsome in shape any way; and under rotten straw they would have a big chance to sustain their reputation of being the handsomest potato, both in size and shape, that the world has ever seen.

#### MAULE'S COMMERCIAL POTATO.

In just two years I have grown 40 bushels of these potatoes from one potato to start with. The yield was certainly fair. The potatoes were large, and some extra large; and if it had not been for Carman No. 3 right alongside of them I should have been quite enthusiastic

over the Commercial. The Carman was fully equal in yield, and ever so much better in shape. The Commercial is generally disposed to be prongy, and the eyes are very deep, and in quality it is not equal to the Carman.

## Tobacco Column.

### HONEST AND CONSCIENTIOUS, EVEN THOUGH CONQUERED BY A BAD HABIT.

*Mr. Root:*—You will find inclosed \$1.40 for payment on the smokers you sent me for my friends G. J. Potter and L. M. Potter as a reward for their quitting the use of tobacco. I feel differently about the matter now, and think that the above is your due. They paid me for the smokers, and requested me to pay you for the same.

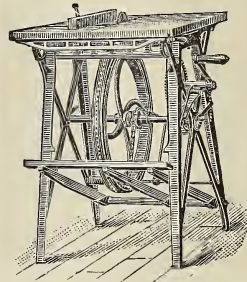
FLOY POTTER.

Silver Creek, Mich., Sept 29.

Dear friend P., I rejoice to know your two friends are straight and square men, even if they have gone back to the tobacco habit; but I hope and pray that they may change their minds, and for the sake of health, if nothing more, give up the weed after all. Let me tell you a little story—something that happened right here on our premises, and you may tell the story to your two friends. The man who files our saws, Mr. Albert A. Herkner, has been for many years in poor health. He consulted different doctors. One called it stone in the gall-bladder, or something like that; another, heart-disease, and I guess they did not know exactly what did ail him. He kept having his bad spells every little while for two or three years. Finally, some time in the summer, he had to give up work entirely, and it was talked around among his friends that he probably never would do another day's work for The A. I. Root Co., or for anybody else, for that matter, in this world. We all felt sad about it, and a new saw-filer was installed. But he greatly needed a little instruction, especially in regard to using the saw-filing machine, by Mr. Herkner himself, and we accordingly asked Mr. H. if he could not get down to the factory long enough to tell the new man something about the new work. One day I was greatly surprised to see him on the street, looking fairly well. I stopped my buggy, and asked him to get in and ride. Then I began to ask him what doctor or what means had been used that he should be so much better. What do you think he said? Why, it is the old story. His last doctor was sensible enough to tell him that, in his opinion, it was the tobacco he used that was killing him, and that he would have to make his choice and do it soon—to go on with his tobacco, just as he was doing, and *die*, or give it up and *live*. The doctor told him he had tobacco heart, and the announcement waked him up somewhat. He said if *that* was the case he would stop then and there, and stop *entirely*. He did stop, and gained so rapidly that in two or three days he was out on the street, and has been at work a good deal of the time for ten hours a day for several weeks. He says he has a terrible fight with the old habit, but physically he is gaining strength every day. He seems glad to talk about it, and to tell his friends his expe-

rience, and has given me permission to tell it here in print.

A particular friend of mine who takes care of my teeth, in speaking of Mr. Herkner's case said he too had quit the use of tobacco in all shapes. He said he was getting to a point in life where he needed all the nerves there were to be had—that is, in order to do his difficult and intricate work as it ought to be done—and he had satisfied himself that tobacco saps the nerves of life more than any other one thing. Well, there are several more right around here who are getting very rapidly to this very point, where it is a matter of life and death. No doctor can do any thing for any man when tobacco is killing that man, unless he gives up its use; and our best physicians are asking their patients, "Which will you do—use tobacco, and *die*, or give it up and *live*?"



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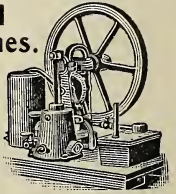
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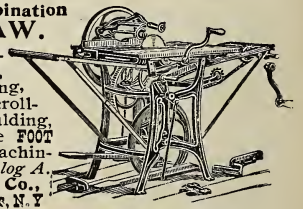
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